

## BUG FAUNA OF NORTHERN TALLGRASS PRAIRIES



TABLE I - Sites sampled. Ten MB sites (\*) are parts of the Tolstoi tallgrass prairie grassland preserve, and 5 IA sites (@) are adjacent to Lake Okoboji.

ON - 1 Ramsay alvar ("The Burnt Lands", 4 km N Almonte); 2, Point Anne alvar (4-5 km E Belleville); 3, Brantford Golf Club; 4, Matchette Road (Windsor); 5, Walpole Is.; 6, Watson Nature Trail (Sarnia); 7, Prairie Point (Cape Croker I.R.); 8, Cabot Head; 9, Little La Cloche Is.; 10, Great La Cloche Is.; 11, Goat Is.; 12, Wikwemikong I.R.; 13, Barrie Is. causeway (10 km W Gore Bay); 14, Barrie Is. (W extremity); 101, Camden E Alvar; 102, 2 km S Lonsdale; 103, Pentecostal Cemetary (3 km W Deseronto); 104, 5 km S Marysville; 105, Trent River Prairie (7 km S Stirling); 106, 4 km S Stirling; 107, Rice Lake Plains; 108, Holland Landing; 109, 1 km SE Paris; 110, Branchton Prairie (3 km S Cambridge); 111, Simcoe Junction Prairie; 112, Komoka Feed Mill Prairie; 113, Reaume Street Prairie (LaSalle); 114, Spring Garden ANSI (Windsor), 115, Ipperwash Beach.

MI - 15, Maxton Plains (Drummond Is.); 16, Newaygo Plains (9 km E Newaygo); 17, Fennville; 18, Pokagon; 19, Monette St. fen (Cassopolis); 20, Cement City; 21, Ives Rd. fen (Tecumseh); 22, Pinckney SRA (N Chelsea); 23, Highland Cemetary (Ypsilanti); 116, Brandt Rd. fen (Ortonville); 117, Liberty fen; 118, Shaw Lake (Yankee Springs Rec. Area).

IL - 24, Goose Lake Prairie (Grundy Co.); 25, Green R. Conservation Area (Lee Co.); 26, Lake in the Hills; 27, Woodstock; 28, Illinois Beach (Zion).

WI - 29, Lulu Lake (Troy Center); 30, Dewey Heights Prairie (Cassville); 31, Schluckebier Prairie (Prairie du Sac); 32, Spring Green; 33, Blue River; 34, Camp Douglas; 35, Ft. McCoy goat prairie (12 km W Tomah); 36, Ft. McCoy drop zone (15 km W Tomah); 37, Ft. McCoy savanna; 38, Bauer-Brockway Prairie (Black R. Falls); 119, Newark Rd. Prairie (5 km W Beloit); 120, Muralt Bluff Prairie (4 km W Albany); 121, Genessee Oak Openings; 122, Semrad Slough (2 km E Woodman).

MN - 39, Kellogg-Weaver dunes; 40, Beaver Natural Area; 41, King's Bluff (Winona Co.); 42, Wild Indigo SNA (Brownsdale, 4 locations); 43, Iron Horse prairie (Hayfield); 44, McKnight prairie (Randolph); 45, Lost Valley prairie (Point Douglas); 46, St. Croix savanna (Bayport); 47, H. Allison Savanna SNA (E. Bethel); 48, Uncas Dunes (Orrock); 49, Roscoe prairie; 50, Schaefer prairie (Brownton); 51, Kasota prairie (St. Peter); 52, Delhi prairie; 53, Mountain Lake; 54, Expandere WMA (NW Dundee); 55, Lundblad prairie (Slayton); 56, 3 km W Chandler; 57, 7 km W Chandler; 58, Blue Mounds St. Pk. (Luverne); 59, Prairie Coteau (Holland); 60, Hole-in-the-Mountain prairie (Lake Benton); 61, Salt Lake WMA (Marietta); 62, Prairie WMA (Ortonville); 63, Ordway prairie (Broton); 64, Glacial Lakes St. Pk. (Starbuck); 65, Staffanson prairie (Höffman); 66, Seven Sisters prairie (Ashby); 67, Miller prairie E (NE Dumont); 68, same, W section; 69, Town Hall prairie (Rothsay); 70, Buffalo River St. Pk. (9 km E Glyndon); 71, Bluestem prairie (8 km E Glyndon); 72, Felton WMA; 73, Bicentennial prairie (E Felton); 74, Blazing star prairie (7 km E Felton); 75, Frenchman's Bluff (Syre); 76, Sandpiper (Ada); 77, Agassiz Dunes (Fertile); 78, Tympanuchus WMA (5 km E Harold); 79, Pembina Trail (10 km E Harold); 80, Crookston-Warren rwy. grade (3 locations); 81, Norway Dunes (Halma); 123, 2 km NW Rice; 124, 4 km NW Verndale; 125, Skull Lake sand ridges (7 km NE Lancaster).

SD - 82, Sica Hollow St. Pk. (N Sisseton).

ND - 83, Oakville Prairie (Emerado).

MB - 84, 5 km W Morden; 85\*, 1 km NE Gardenton; 86\*, 2 km ENE Tolstoi; 87\*, 3 km W Gardenton; 88\*, Stuartburn; 89, Emerson; 90, Myrtle; 91, Transcona; 92, Living Prairie Museum (Winnipeg); 93, Winnipeg, E airport; 94, Grosse Isle; 95, Brennan prairie (N Stony Mtn.); 96, 7 km E St. Ambrose; 97, 8 km S St.-Laurent; 98, Oak Point, B; 99, Camper; 100, The Narrows (E Wapah); 126\*, 2.2 km E Tolstoi; 127\*, 4 km E Tolstoi, 5 km W Gardenton; 128\*, 6 km E Tolstoi; 129\*, 3 km W Gardenton (TNC site); 130\*, 8 km NE Stuartburn; 149\*, Ukrainian church heritage site (5 km E Tolstoi).

IA - 131, Hayden Prairie (5 km S Chester); 132, Crossman Prairie (7 km NE Riceville); 133, Hoffman Prairie (Ventura); 134, Stinson Prairie (7 km W Algona); 135@, Freda Haffner Kettlehole (3 km W West Okoboji); 136@, Cayler Prairie (8 km NW West Okoboji); 137, Excelsior Fens (7 km S Lake Park); 138, Silver Lake fen (5 km SW Lake Park); 139@, Wahpeton water tower; 140@, Korey Halbur Preserve (3 km W Milford); 141, Kirschner Prairie (10 km E Spencer); 142@, Spring Run Fen (13 km NE Milford); 143, Anderson Prairie (4 km NW Estherville); 144, Steele Prairie W sector (3 km NW Larrabee); 145, same, E sector; 146, Five Ridges Prairie (20 km N Sioux City); 147, Derald Dinesen Prairie (3 km SW Kirkman).

KS - 148, Konza Prairie lot 10D (14 km S Manhattan).

TABLE II - Leafhoppers (Cicadellidae) and piglet bugs (Caliscelidae) of prairie sites (\* = 10<sup>9</sup> new records). Total prairie-endemic species in survey area: ON- 29 MI- 15 IL- 10 WI- 37 MN- 58 SD- 11 ND- 10 MB- 38 IA- 33; total for all sites - 91.

#### PIGLET BUGS

(@ indicates prairie endemics; ^ are prairie and southeastern)

- Aphelonema simplex Uhler (@): ON 4-5; MN\* 43, 47, 126, 128; MB 86, 91, 94-95, 97-98; (also MS-ND-KS-TX). On little bluestem.
- Bruchomorpha beameri Doering (@): MN\* 66, 73, 77-78; (also AB-AZ-BC-CA-MB-MT-ND-SK).
- B. dorsata Fitch: ON\* 9, 115; MI\* 21; WI 32-33, 35, 37-38; MN\* 39-40, 47, 49, 51, 57, 62, 64, 69, 73-74, 77; SD\* 82; ND 83; MB\* 86, 92, 96-97-116, 124-125, 149; IA\* 135, 143-144; KS 148; (also NC-NJ-NY-MO-OH-TX). On little bluestem.
- B. extensa Ball (@): WI\* 36; KS\* 148; (also AZ-CA-IL\* [fide Panzer]-NM-TX-UT). On Indian grass.
- B. iocosa Stål (^): ON 16; WI\* 31, 33, 36; MN\* 51, 60, 63, 73, 77, 125; SD\* 82; ND\* 83; MB\* 86, 89, 94, 96-97; IA 146; KS 148; (also FL-NE-SC-TX-VA). On little bluestem.
- B. keidensia Doering (@): MB 87, 94, 97; ENDEMIC.
- B. oculata Newman: ON 1-3, 9-13, 101, 108-109, 112, 115; MI 16; WI 33; MN 47, 63, 74; IA 133, 140; (also CT-IN-KS-ME-MS-NH-PA-VT).
- B. pallidipes Stål (^): MI 16; WI 38; (also AL-DC-FL-CO-KS-LA-MS-SC-VA).
- B. tristis Stål: WI 33, 120; MN 125; (also AZ-CA-CO-FL-IA-MT-NC-ND-NJ-NY-ON-OR-TX).
- Fitchiella robertsoni (Fitch) (@): ON\* 115; (also AR-FL-IL-IN-KS-OK-TX).
- Peltonotellus bivittatus Ball (@): MN\* 45, 63; (also AB-AZ-CO-KS-ND-NM-OK-SK). On prairie muhly grass.
- P. histrionicus Stål: ON 9-11, 13, 15-16, 108; WI 31-32, 34; MN 44, 47, 125; MB 86, 94-95, 127, 149; MI 22, 116; (also BC-CA-CO-IA-MA-MT-NH-NM-NV-NY). On sedges.

#### LEAFHOPPERS

A - prairie endemics (@)

- Acerataqallia nanella Oman: MN\* 70; SOUTHWESTERN SP.
- A. acaria n. sp.: MN\* 40; RARE.
- A. alvarensis n. sp.: ON\* 2, 11-14; MI 16; WI\* 32; MN\* 39, 47, 75.
- A. viator n. sp.: ON\* 7, 10-11, 103; MI 15-16; WI\* 34, 121; MN\* 48, 63, 69, 72, 80, 125; SD\* 82; MB\* 86, 88, 90-91; IA\* 131.
- Aflexia rubranura (DeLong): ON 9-14; IL 24, 26; WI 31-32, 35; MN 45, 49, 51, 55, 62-64, 73-74; SD 82; MB 94-98, 100. On prairie dropseed.
- Amblysellus punctatus (Osborn & Ball): WI\* 32, 38; MB\* 97, 100; IA 146. On June grass.
- Athysanella attenuata Baker: MN\* 44, 93; WESTERN SP.
- A. terebrans Gillette & Baker: ON 115; MN 77, 81; MB 95. On sand grass.
- Attenuipyga vanduzeei (Osborn & Ball): WI\* 30 [fide Ballard]; KS 148; RARE.
- A. loyceae n. sp.: MB\* 94, 97-98; ENDEMIC.
- Auridius helvus (DeLong): MI 16; WI\* 32-33, 34, 38; MN 47. On June grass.
- Chlorotettix spatulatus Osborn & Ball: ON 4, 115; MN 59; MI\* 117; IA 147; KS 148. On little bluestem.
- C. n. sp.: ON\* 113; new for Canada; ENDEMIC.

- Commellus colon (Osborn & Ball): WI\* 32; MN 47, 57, 60, 62-63, 73, 81, 124-125; ND 83; MB 74, 91, 94, 97; IA 135. On needle grass.
- C. comma (Van Duzee): MI 16; IL 25; WI\* 34, 37, 39; MN 43-44, 51, 60, 74, 79; SD 82; IA 134, 144. On wild rye and wheatgrasses.
- C. sexvittatus (Van Duzee): MN 77, 81; MB\* 93; WESTERN SP. On wheatgrasses.
- Cuerna sayi Nielson: WI 32, 36; MN 40, 69.
- Deltocephalus n. sp.: MN\* 69; ENDEMIC.
- Dikraneura arizona DeLong & Caldwell: MN\* 44; SOUTHWESTERN SP. On June grass.
- Dorycara platyrhynchus (Osborn): WI\* 34; MN 45, 47; ILLINOIS + ADJACENT STATES. On wild rye.
- D. minor (Osborn): MN 60, 74, 77, 79, 81; ND 83; MB 89-91. On slender wheatgrass.
- Dorydiella kansana Beamer: ON 4, 7; IL 28; IA 141. On spike rush.
- Driotura robusta Osborn & Ball: WI\* 38; MN 59-60, 68, 73, 75, 78; ND\* 83; IA 135; KS 148. On Asteraceae.
- Elymana circius Hamilton: ON 112; NORTHWESTERN SP.
- Extrusanus oryssus Hamilton: MI 16; IL 24, 26, 28; WI 32, 34; MN 45, 47, 49-50, 53, 58, 60, 63, 65, 69, 74, 76-77, 79, 81; ND 83; MB 85-86, 89, 91-95, 97-98, 100, 126, 128-129; IA 131, 133, 135-136, 144.
- Flexamia abbreviata (Osborn & Ball): WI 31, 32; MN 39, 47, 60, 63-64, 66, 73-74, 77, 125; IA 135, 140. On blue and hairy grama grasses.
- F. albida (Osborn & Ball): WI\* 30, 32, 120; MN 40, 45, 51, 57-60, 62-64, 66; SD 82; IA 135-136, 143, 146; KS 148. On side-oats grama.
- F. dakota Young & Beirne: MN\* 69; IA 146. On little bluestem.
- F. decora Beamer & Tuthill: ND 83; MB 94-100. On mat muhly grass.
- F. delongi Ross & Cooley: ON 8-14, 115; MI 15-16; WI 31-34, 36-38; MN\* 40, 125; MB 94-98. On little bluestem.
- F. graminea (DeLong): MN\* 52, 55, 73, 80; ND 83; MB 84. On little bluestem.
- F. huroni n. sp.: MI\* 116; ENDEMIC. On mat muhly grass.
- F. pectinata (Osborn & Ball): IL 26; WI\* 29-30, 32, 120; MN 40, 44-45, 48, 51, 60, 63, 66; IA 135, 146. On side-oats grama.
- F. prairiana DeLong: ON 4, 115; MI\* 21; MN 43, 49, 52-53, 55, 69, 72-73, 77, 78-81, 124-125; MB 86-89, 91-92, 94, 96-97, 100, 126-130; IA 133, 141, 146; KS 148. On bluestems.
- F. serrata Beamer & Tuthill: MN\* 45, 63, 69; ND 83; MB 86-87, 94-95, 97-98, 126-129. On mat muhly grass.
- F. stylata (Ball): IL\* 25; MN 45, 59-60, 63; IA 135. On muhly grasses.
- Graminella mohri DeLong: ON 8; MN\* 80; ILLINOIS + ADJACENT STATES. On switchgrass.
- G. oquaka DeLong: ON 4-5; WI\* 33; MN\* 47, 51. On switchgrass.
- G. pallidula (Osborn): ON 4; IA 141, 143. On switchgrass.
- Gypona contana DeLong: MB 89, 91, 94, 96; WESTERN SP.
- Gyponana vincula DeLong: WI 31-32; MN\* 49, 57, 60, 62, 64, 69, 72-73, 80; MB\* 126; IA\* 141-143; KS 148.
- Hecalus viridis (Uhler): WI 34; MN 39, 44, 47, 77; SD 82; MB 86, 89; IA 136, 146-147.
- Kansendria kansiensis (Tuthill): IA\* 133; KS 148; ILLINOIS + ADJACENT STATES. On prairie muhly grass.
- Laevicephalus minimus (Osborn & Ball): ON 2-3, 103; IL 26; WI 32, 35, 120; MN 40, 43-45, 47, 51, 57-58, 60, 63, 66, 73; SD 82; IA 146. On side-oats grama.

- Laevicephalus nr. exiguus Knull: WI\* 37 (females, possibly conspecific with n. sp. from Sauble Beach, ON)
- L. poudris Tuthill: MB 86, 94-97, 126-128; NORTHWESTERN SP. On mat muhly grass.
- L. saskatchewanensis Hamilton: MB\* 93; NORTHWESTERN SP. On salt-meadow grass.
- L. unicoloratus (Gillette & Baker): ON 4, 6-11, 13, 106, 110-114; MI 16, 20-21, 23, 116; IL 24-26, 28; WI 31-34, 36-38, 120-122; MN 39-40, 44-49, 51, 53, 55, 57-66, 68-70, 72-74, 76-81, 123-125; SD 82; MB 86-87, 89, 94-95, 97-99, 126-128, 130, 149; IA 131, 133-135, 139, 141-144, 146-147; KS 148. On bluestems.
- L. vannus Knull: WI 36; MN 40; RARE.
- Limotettix conservatus Hamilton: IA\* 137; FEN SP. On spike rush.
- L. elegans Hamilton: ON\* 4, 113; RARE; new for Canada. On spike rush.
- L. urnura Hamilton: ON 2, 4, 7-13, 15, 103, 104, 112, 115; MN 43, 53; MB 85, 94, 128; IA 137. On spike rush.
- Lonatura catalina Osborn & Ball: IA 140; WESTERN SP. On sand dropseed.
- L. megalopa Osborn & Ball: MN\* 44, 60, 63, 66; IA 146. On prairie muhly grass.
- L. salsura Ball: MN\* 61; MB 94, 97, 126; WESTERN SP. On salt grass.
- L. teretis Beamer: MB\* 94, 97; WESTERN SP. On mat muhly grass.
- Macropsis quadrimaculata Breakey: MI; WESTERN SP. on beach dune sites. On sand cherry.
- Macrosteles wilburi Dorst: KS 148; SOUTHWESTERN SP.
- Memnonia grandis (Shaw): KS 148; SOUTHERN SP. On prairie dropseed.
- M. panzeri n. sp.: ON 1, 8-11, 13-14; WI\* 31, 35; MN 44-45, 49, 55, 57, 59-60, 62-63, 65, 69, 72-74, 76, 79-80; SD\* 82; MB\* 86-89, 94-95, 97-98, 126-128, 149; IA\* 131, 133, 135, 143. On prairie dropseed.
- M. anthalopus n. sp.: MN\* 49, 69, 76; ND\* 83; MB\* 86, 94-95, 97-98, 100, 126-127, 129; ENDEMIC to Red River Valley. On mat muhly grass.
- Mesamia coloradensis (Gillette & Baker): MN\* 47, 77; SD 82; MB 89, 94. On sage.
- Mocuellus americanus Emeljanov: ON 9-11; MN\* 58, 74, 76, 79; SD 82; ND 83; MB 91, 94-100. On slender wheatgrass.
- Neohecalus majestus n. sp.: ON\* 114; MI 17, 19, 118; WI 30, 121; MN 55, 61, 69, 72, 79-80; MB 97-98, 126-128; IA 136, 138. On cordgrass.
- Oncopsis minor prairiana Hamilton: MB 94, 126-127; NORTHERN SP. On water birch.
- Orocastus perpusillus (Ball & DeLong): MN\* 73, 77; WESTERN SP. On spear grass.
- Paraphlepsius altus (Osborn & Ball): WI 36; MN 44, 60, 63, 66; IA 140. On blue and hairy grama grasses.
- P. lascivius (Ball): MB 127; IA 146; WESTERN SP.
- P. lobatus (Osborn): ON 11, 115; MI 15; WI 31; MN 49, 52, 64; MB\* 94; KS 148. On little bluestem.
- P. nebulosus (Van Duzee): MN\* 55, 58; IA 135; SOUTHERN SP.
- P. umbrosus (Sanders & DeLong): ON 115; WI 32, 35, 37-38; MN 47; MB 94.
- Pendarus magnus (Osborn & Ball): WI\* 121; MB\* 94, 97-98, 126. On cordgrass.
- Polyamia caperata (Ball): ON 108-113; MI 16, 116; WI 31-32; MN 39-40, 44-47, 49, 51, 53, 60, 63-64, 66, 69, 80; SD 82; MB 91, 94, 97; IA 135, 143, 146; KS 148. On little bluestem.
- P. dilata DeLong: WI\* 32, 35; MN\* 40; IA\* 146; ENDANGERED SP.
- P. rossi DeLong: IL 25; WI\* 32; ILLINOIS + ADJACENT STATES. On panic grasses.

Polyamia satur (Ball): KS 148; SOUTHERN SP.  
P. similis DeLong & Davidson: ON\* 114; WI\* 33; new for Canada.  
Prairiana cinerea (Uhler): WI\* 32; MN 58, 60, 81; ND 83; MB 97.  
P. kansana (Ball): KS 148; SOUTHERN SP. BIOLOGY UNKNOWN.  
P. ? n. sp.: ON\* 115; new to Canada; ENDEMIC. ADULTS UNKNOWN.  
P. ? gidana DeLong: WI 32, 34; MN 39, 47-48, 55, 60, 63-64; MB 86-87, 95, 99, 128; IA 135, 146. BIOLOGY UNKNOWN.  
Psammotettix knullae Greene: MN\* 61; WESTERN SP. On wild barley.  
Rosenus cruciatus (Osborn & Ball): MI 16; WI\* 32-33, 36; MN 39, 44, 47, 73, 75-76, 125. On June grass.  
Texanopus marmor (Sanders & DeLong): ON 9; NORTHWESTERN SP. On creeping juniper.  
Unoka gillettei Metcalf: MN\* 77; WESTERN SP.  
Xerophloea peltata (Uhler): IA 140; WESTERN SP.

B: prairies & E grasslands (^)

Athysanella longicauda Beirne: ON 1-3, 101, 103; MI 16; EASTERN SP. On dropseeds (but not prairie dropseed).  
Balclutha abdominalis (Van Duzee): ON 4; SOUTHERN SP.  
B. neglecta (DeLong & Davidson): MN 39-40, 43-44, 49-53, 55-56, 58-60, 63, 65, 67-69, 76-81; SD 82; ND 83; MB 84-85, 93-94, 97-99, 126-129; IA 140, 142-144, 146-147. WIND-BLOWN SP.  
Chlorotettix fallax Sanders & DeLong: ON 4; SOUTHERN SP.  
C. galbanatus Van Duzee: ON 4, 115.  
Flexamia atlantica (DeLong): WI\* 32; SOUTHERN SP. On switchgrass.  
F. areolata (Ball): ON\* 114; IA 146; SOUTHERN SP.; new for Canada. On purple lovegrass.  
F. inflata (Osborn & Ball): ON 2, 4, 101, 104; IL 24; MB 91, 95, 127-128; IA 141. On rushes.  
F. picta (Osborn): IL 24 (fide Panzer); SOUTHERN SP. On 3-awn grass.  
F. reflexa (Osborn & Ball): ON 4, 104, 113, 115; MI\* 21; EASTERN SP. On Indian grass.  
Gypona melanota Spangberg: ON 4; MI 16; MN 43, 51, 55, 57, 59-60, 62-64, 69-70, 72, 74, 79; IA 135-136, 143-144.  
Memnonia flavida (Signoret): ON 4, 113; WI 120.  
Mesamia nigridorsum (Ball): ON 4; IL 24; WI 38; MN 40, 69, 72, 80; MB 89, 94, 97, 128. On sunflowers.  
Neocoelidia tumidifrons Gillette & Baker: ON 10; IL 24; MI 116; WI 34; MN 41, 48-50, 58, 60, 63, 65, 68, 74; ND - 83; MB 85, 89, 91, 94-95, 98; IA 133, 135, 146; KS 148. On goldenrod.  
Scaphytopius cinereus (Osborn & Ball): IL 26; MN 47-48, 63; IA 143; KS 148.  
Stirellus bicolor (Van Duzee): MI 18; IL 26; WI\* 31-32, 36-37; MN 40-41, 69, 73, 79-80; MB 86-87, 89, 94, 98-99, 128, 149; IA 144, 146-147. On little bluestem.  
Xerophloea major Baker: ON 4, 113; IL 24-25; WI 32; EASTERN SP.

C: widespread

Aceratagallia agricola n. sp.: ON 2, 109; MI 16; IL 25; WI 31-34, 119; MN 77; IA 140, 147.  
A. humilis (Oman): ON 11, 115; IL 25-26; WI 30, 33-34; MN 43, 77, 79; MB 128; IA 140.  
A. sanguinolenta (Provancher): ON 2, 103-104, 108, 114; MI 16; WI 31-35, 38, 120; MN 44-45, 49-51, 57-60, 63-64, 66, 74, 78; SD 82; ND - 83; MB 86, 96-97; IA 135, 141, 143, 146-147.

- Acinopterus sp.: WI 32; IA 140.  
Agalliopsis sp.: ON 102; IA 144.  
Agalliota spp.: ON 4, 113, 115; MI 21; WI 121; MN 43, 48, 55, 63-64, 69, 72.  
Ampliphalus inimicus (Say): ON 1-4, 7-8, 10-11, 101-102, 107, 115; MI 15-16, 18-19, 21; IL 24-28; WI 29, 31-32, 34, 36-37; MN 39, 44, 47, 49-55, 58-60, 65, 73-77, 79-81; ND 83; MB 85, 89, 95, 99, 122, 124-128, 130, 149; IA 131, 133, 135, 137, 140, 143-144, 146-7; KS 148.  
Possibly wind-transported.  
Anoscopus spp.: MN 59-60, 80; MB 84, 94, 97; IA 137, 140, 143-144.  
EUROPEAN SPP.  
Aphrodes spp.: ON 4, 7, 102-103, 112, 114-115; MI 16, 19, 116; IL 24-27; WI 31-33, 35, 38, 122; MN 39, 45-46. EUROPEAN SPP.  
Athysanus argentarius Metcalf: ON 2, 4, 6-8, 10, 102-103, 106, 109, 112-115; MI 15-16, 19, 21-23, 116-118; IL 24-26, 28; WI 31-34, 119-122; MN 39, 42, 45-47, 49-81, 123-124; ND 83; MB 84-85, 89, 94-95, 97, 100, 126-130, 149; IA 131-137, 139-146. EUROPEAN SP.  
Balclutha punctata (Thunberg): ON 110.  
Chlorotettix meriscus Cwikla: MI\* 118.  
C. tergatus (Fitch): MI 118; MN 55.  
C. tunicatus Ball: IA 143.  
C. unicolor (Fitch): ON 1, 4, 7-8, 12, 102, 103-104, 109, 113-114; MI 16, 18-19, 21, 116, 118; IL 25; WI 31, 33, 35-38, 121; MN 40, 42-47, 51-52, 54-60, 63-64, 70, 72-79, 123-125; MB 84, 91, 94, 97, 126, 128-130, 149; IA 131-136, 139-144, 146-147.  
Cicadula spp.: ON 1, 8, 10; MI 16-17, 21-22, 116-118; IL 24; WI 121; MN 53, 55, 69, 79; MB 86, 94, 126, 128; IA 131, 133, 141.  
Colladonus spp.: ON 115.  
Commellus cedilla Hamilton: MN 49; WI 34; MB 86, 94-96, 98, 127.  
Cosmotettix bilineatus (Gillette & Baker): ON 10; IA 131.  
C. luteocephalus (Sanders & DeLong): ON 10;  
C. paludosus (Ball): MI 117.  
Cuerna striata complex: ON 3; MN 47, 75, 78; MB 97, 149.  
Deltocephalus balli Van Duzee: ON 4, 112; MB 100.  
Dikraneura angustata Ball & DeLong: ON 113; WI 30; MN 53; IA 147.  
D. hungerfordi Lawson: MB\* 91.  
D. mali (Provancher): ON 2; MN 59, 61, 75; IA 131, 140, 147.  
D. ossia Beirne: MN 125; MB 126.  
D. urbana Ball & DeLong: MN 49.  
D. variata Hardy: MB 94, 96.  
? sp.: WI 32-33, 35; MN 39-40, 43, 51, 55, 59; MB 91, 94  
Diplocolenus configuratus (Uhler): ON 2, 4, 6, 102, 104, 106-107, 109, 114-115; MI 15-16, 22, 118; IL 25-26, 28; WI 32-34; MN 41, 44-46, 48-49, 51, 53, 58, 60, 63-65, 68, 73-74, 76-78, 79, 81, 124-125; ND 83; MB 85, 89, 91-95, 97-100, 126-130; IA 131, 133-136, 142-144, 147.  
D. evansi (Ashmead): ON 2, 7-8, 10-11, 13-14, 102, 104, 106, 108-109; MB 93, 95, 149.  
Doratura stylata (Boheman): ON 2, 4, 7-8, 10, 103-104, 106-112, 114-115; MI 15-16; IL 24-26; WI 29-38, 121-122; MN 39, 42, 44-47, 49-51, 56-58, 60-61, 63-66, 70, 73, 75-81, 123-125; SD 82; ND 83; MB 84-85, 91-95, 97, 99, 127-130, 149; IA 132-136, 140-144, 146. EUROPEAN SP.  
Draeculacephala spp.: ON 6, 113, 115; MI 17-19, 23, 116-118; IL 24-25; WI 33, 36, 120; MN 32-33, 39-40, 43-48, 51-55, 67-69, 79; MB 94, 97, 126-128, 149; IA 131, 137-138, 141, 143, 147; KS 148.

- Driotura gammaroides (Van Duzee): ON 113-114; MI 23; IL 25; WI 32-33, 38; MN 60, 69, 74, 77-79, 81, 85, 125; ND - 83; MB 84, 86, 89, 91, 94, 98, 149; IA 146; KS 148.
- Elymana sulphurella (Zetterstedt): ON 1, 8. EUROPEAN SP.
- Empoasca spp.: ON 2, 7, 115; MN 63, 75, 81; IA 145.
- Erythroneura ziczac Walsh: MN 55.
- Euscelis aemulans (Kirschbaum): IA 136.
- Exitianus exitiosus (Uhler): WI 34, 120; MN 43-46, 49, 53-55, 58-60, 66, 74, 77, 79; IA 131, 133, 135-136, 140-141, 143-144, 146-147; KS 148. WIND TRANSPORTED.
- Forcipata loca DeLong & Caldwell: ON 1, 7, 101, 115; MI 15, 22-23, 118; IL 24; WI 29; MN 33, 76.
- F. triquetra DeLong & Caldwell: ON 1, 7, 13; MN 45, 49, 52, 69, 72, 76, 79; SD 82; MB 84, 86, 96-97, 126; IA 141. On sedges.
- Graminella nigrifrons (Forbes): MI 16, 19, 22. WIND TRANSPORTED.
- Graphocephala spp.: ON 115; WI 32, 37.
- Gyponana salsa DeLong: MN 125.
- G. serpenta DeLong: ON 115; MI 15; MB 92, 94, 97, 127.
- Hecalus major (Osborn): MN 39, 41, 69, 74, 81, 89; ND 83; MB 85-86, 95, 100; IA 131, 140.
- H. montanus (Ball): WI 34; SD 82; ND - 83; MB 89, 90-91, 93.
- Helochara communis Fitch: MN 53; MB 84; IA 137.
- Idiocerus spp.: ON 1, 11, 115; IL 24; WI 34; MN 43, 80, 125; MB 84, 94, 126; IA 131, 133.
- Idiodonus spp.: ON 7.
- Jikradia olitoria (Say): ON 4, 112, 115; WI 32.
- Laevicephalus acus (Sanders & DeLong): ON 113, 116; MI 118.
- L. melsheimeri (Fitch): MN 125; IA 133.
- L. sylvestris (Osborn & Ball): WI 120; MN 70.
- Latalus ocellaris (Fallén): ON 1-2, 6-7, 12-13, 102, 115; MI 16; WI 122; MI 16; MB 91, 93-94. EUROPEAN SP.
- L. personatus Beirne: ON 2-3, 6-10, 101-102, 104, 108, 111, 114-115; MI 15-16, 23; IL 24-26, 28; WI 29-34, 36-38, 122; MN 39, 41, 44-48, 51, 57-58, 61, 63-65, 77, 80-81, 125; SD 82; MB 92, 94, 96-97, 100, 126-127, 149; IA 133, 136, 139-140, 144, 146.
- L. sayii (Fitch): ON 2, 4, 114-115; MI 16, 117.
- Limotettix anthracinus (Van Duzee): IA 135.
- L. balli (Medler): ON 8-9, 13, 15; MI 21, 116; RARE.
- L. ferganensis Dubovsky: ON 101, 112; MI 118; MN 43, 53; MB 97, 128; IA 141.
- L. kryptus Medler: ON 4?; MI 21?; IL 24; WI 121; MN 55?, 69, 79; MB 94?; IA 141?
- L. omani (Medler): MB 128; new for Canada.
- L. osborni (Ball): ON 1-2, 7-9, 11, 101, 108, 113-114; MI 15-16; IL 25; WI 31, 33, 121; MN 46-47, 49, 53, 57-58, 60, 63, 65, 70, 73, 75, 77-80, 123-124; MB 126, 149; IA 135-136.
- L. plutonius (Uhler): ON 10; WI 34; MB 99.
- L. sphagneticus Emeljanov: ON 13; MB 86, 126.
- Macropsis basalis (Van Duzee): ON 115.
- M. ferrugineoides (Van Duzee): ON 115; MN 43.
- M. sauroni Hamilton: ON 115; MN\*125.
- M. viridis Fitch: MB 127.

- Macrosteles fascifrons (Stål): ON 112; MN 59, 74.
- M. quadrilineatus (Forbes): ON 7-8, 10, 12-13, 112; MI 15, 19, 118; IL 24, 26-28; WI 32-34, 36-38, 121; MN 39, 41, 44-45, 49-55, 57-60, 62, 65-66, 68-73, 76-81, 125; SD 82; MB 84, 94, 97, 126-130; IA 131-132, 134-136, 140-141-142, 144, 147. WIND TRANSPORTED.
- M. slossonae (Van Duzee): MI 118.
- M. variata (Fallén): MI 117.
- Menosoma cincta (Osborn & Ball): ON\* 113, 115. WI\* 32-33.
- Neokolla hieroglyphica (Say): ON 4, 103, 108, 114-115; MI 19, 21, 23, 116; IL 24; WI 35-38, 121; MN 41, 46, 81; MB 85, 94, 100, 149.
- Orienteus ishidae (Matsumura): ON 115. ASIAN SP.
- Osbornellus spp.: ON 115; MI 118.
- Paluda gladiola (Ball): ON 12; MN 69, 74, 76; ND - 83; MB 84, 86, 91, 94-95, 97, 126-129; IA 138.
- Paraphlepsius fulvidorsum (Fitch): ON 1, 7.
- P. irroratus (Say): ON 2, 4, 8, 101, 112, 115; MI 16; IL 24; WI 31-32; MN 44-46, 49, 58, 60, 65, 74, 77; SD 82; MB 86, 94-95.
- P. solidaginis (Walker): MB 94, 97, 126, 128.
- P. truncatus (Van Duzee): ON 1-2, 6-7, 9-11, 13, 102.
- Pasaremus concentricus (Van Duzee): MB 126.
- Pendarus punctiscriptus (Van Duzee): ON 4, 115; MI 15; WI 31; MN 80; MB 84, 94, 127.
- Platymetopius spp.: ON 1, 10, 115; WI 37; MN 46, 62, 69, 77-78, 80; MB 94, 96, 126.
- Polyamia apicata (Osborn): ON 1, 8-9, 115; IL 25; WI 32, 34; MN 46-47, 66.
- P. compacta (Osborn & Ball): ON 114; IL 25; WI 31-33, 36, 38, 120; MN 40, 44-45, 47, 55, 57-60, 62-64, 66, 73, 75, 124-125; IA 135, 146; KS 148.
- P. obtectus (Osborn & Ball): MN 47.
- P. weedi (Van Duzee): IL 25; WI 33-34
- Psammotettix lividellus complex: ON 2, 4, 10, 13-14, 102, 114-115; MI 16, 117; IL 24-25; WI 36, 39; MN 44, 48, 58, 63, 69, 74, 76, 79, 81; ND - 83; MB 85-86, 91-97, 99-100, 127; IA 140.
- Scaphoideus spp.: ON 2, 4, 10, 113, 115; MI 15, 116; WI 37; MN 47; MB 94, 130.
- Scaphytopius spp.: ON 1, 4, 6-8, 10-12, 102, 113-115; MI 15-16, 21-22, 116-117; IL 24; WI 32, 34; MN 47-48, 58-60, 74-75, 78-79, 80; SD 82; MB 85-86, 94, 126.
- Sorhoanus pascuella (Fallén): ON 1, 4; MI\* 16, 23, 116, 118; IL\* 22-27; WI 121; IA\* 131. EUROPEAN SP.
- S. uhleri (Oman) - MN 69, 81, 125; ND 83; MB 85, 89, 90-91, 94-95, 100, 126.
- Stroggylocephalus placidus (Provancher): MI\* 116.
- Texananus arctostaphylae (Ball): ON 1, 11, 115; MI 15; MN 47; MB 92, 96.
- T. decorus (Osborn & Ball): MB\* 94.
- Tylozygus bifidus (Say): ON 4, 115; MI 118; WI 32.
- Typhlocyba venusta McAtee: MB 126.
- Xestocephalus spp.: ON 2, 8, 115; MI 15, 23; SD 82; MB 91-92, 94.

Table III - Sites (numbered as in Table I) ranked by numbers of prairie endemic leafhopper and piglet bug species. A crosshatch (#) indicates a frequently-burned or recently burned site. An asterisk (\*) indicates the 27 sites with red-tailed leafhoppers (*Aflexia rubranura*). An exclamation mark (!) denotes the presence of rare species. Most sites have 0-2 leafhoppers that also occur in eastern grasslands, but 3 such occur in sites 32, 40, 60, 80, 89, 95, 113, 144 (+); 4 occur in sites 63, 69, 94, 98, 146 (++); 5 occur in site 24 (+++); and 9 occur in site 4. Half the sites have 0-3 endemic species, a sixth have 4-6 such species, another sixth have 7-9 such species and the top sixth have 10-25 such species.

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DEPAUPERATE: 0-3 endemic species; no red-tailed leafhoppers

- 0 spp. ON 101, 102, 105, 107; MI #18, #20, 22; IL #27; WI #119; MN #41, #42, 54, 56, #67, #71; IA 132, 145.
- 1 sp. ON #1 (MOST EASTERLY SITE), #3, #6, 104, 106, 108, 109; MI 17-19, #23, 117, 118; WI #29, 122; MN 50, #123; MB #84; IA 138, 139.
- 2 spp. ON 5, #10, 111; MI 21 (!); MN #46, 68, 70; MB 85, 90, 92, 129, #130, #149; IA 137, #142.
- 3 spp. ON 2, 7, 103, 114; MI 116 (!+ONLY SITE for *Flexamia* n. sp.); IL 24\* (+++), 28; MN 52, #65, 75, 78, #124; MB 88; IA 134, 144(+), #147.

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FAIR: 4-6 endemic species; 20% with red-tailed leafhoppers

- 4 spp. ON 12\*, 14\*, 112, 113 (+, !; ONLY SITE for *Chlorotettix* n. sp.); MI 15 (!); IL 25; WI #30 (!), 37, 120, 121; MN #43, 48, 61; MB 93 (SMALLEST SITE), 99; IA 131, 136, 140.
- 5 spp. ON 8 (!); IL 26\*; WI 35\*; MN 53, 58; MB 96\*; IA 133, 141.
- 6 spp. ON 13\*(!); WI 33, 38; MN 57, #59, 62\*, 72, 76; MB 87; IA 143.

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GOOD: 7-10 endemic species; 37% with red-tailed leafhoppers

- 7 spp. ON 9\*(!), 10\*, 100\* (MOST NORTHERLY SITE); MN 125.
- 8 spp. WI 31\*, 36 (!); MN 55\*, 79, 81; MB 89 (+), 127.
- 9 spp. ON 11\*, 115 (ONLY SITE for *Prairiana* n. sp.; DISJUNCT SITE for *Fitchiella robertsoni*); MI 16; WI 34; MN 39, 49\*, 51\*, 64\*, 66, 74\*, #80 (+); MB 91.
- 10 spp. ON 4 (!; SITE WITH MOST SE SPP.); MN 40 (+, !); MB 128; ND 83.

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VERY GOOD: 11-14 endemic species; 40% with red-tailed leafhoppers

- 11 spp. MB 95\*(+), 98\*(++).
- 12 spp. MN 44 (DISJUNCT SITE for *Dikraneura arizona*), 45\* (DISJUNCT SITE for *Peltonotellus bivittatus*), 77, 82\*; IA 135.
- 13 spp. MB 86; MN 69(++) (ONLY SITE for *Deltocephalus* n. sp.), 73\*; IA 146(++).
- 14 spp. MB 126.

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EXCELLENT: 15-25 endemic species; 50% with red-tailed leafhoppers

- 15 spp. -
- 16 spp. MN 47 (BEST SITE WITH LITTLE OR NO DROPSEED).
- 17 spp. MN 63\*(++); (also IA Okoboji Lake area, total of all sites).
- 18 spp. MN 60 (+).
- 19 spp. KS 148 (!).
- 20 spp. -
- 21 spp. WI 32\*(+) (BEST FIRE-MANAGED SITE); MB 97\* (BEST HAYED FIELD).
- 22 spp. - (MB Tolstoi area, total of all sites).
- 23 spp. - (MB total of Lake Manitoba sites 96-98\*)
- 24 spp. -
- 25 spp. MB #94\*(++).