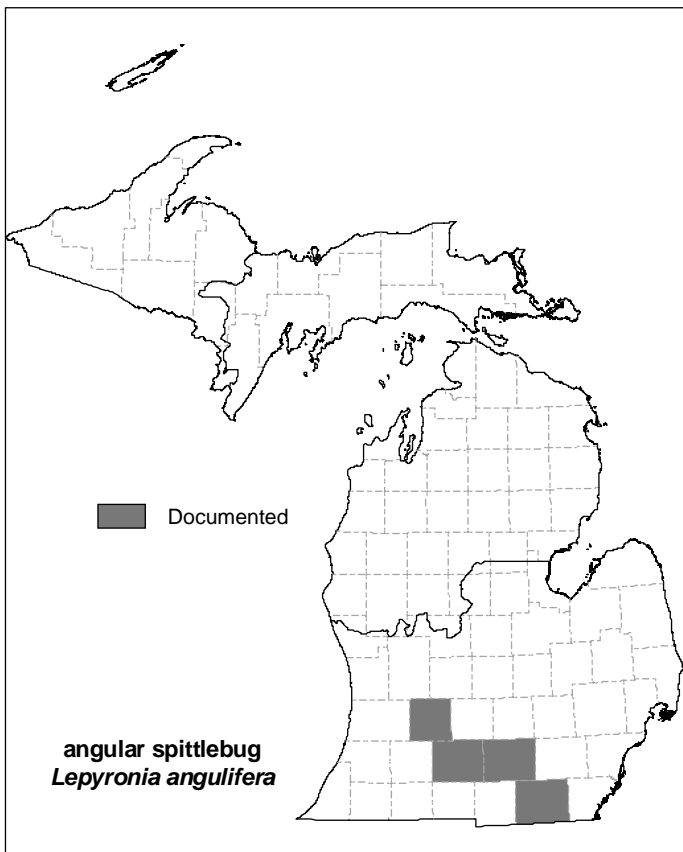


INSECTS – CICADAS & HOPPERS



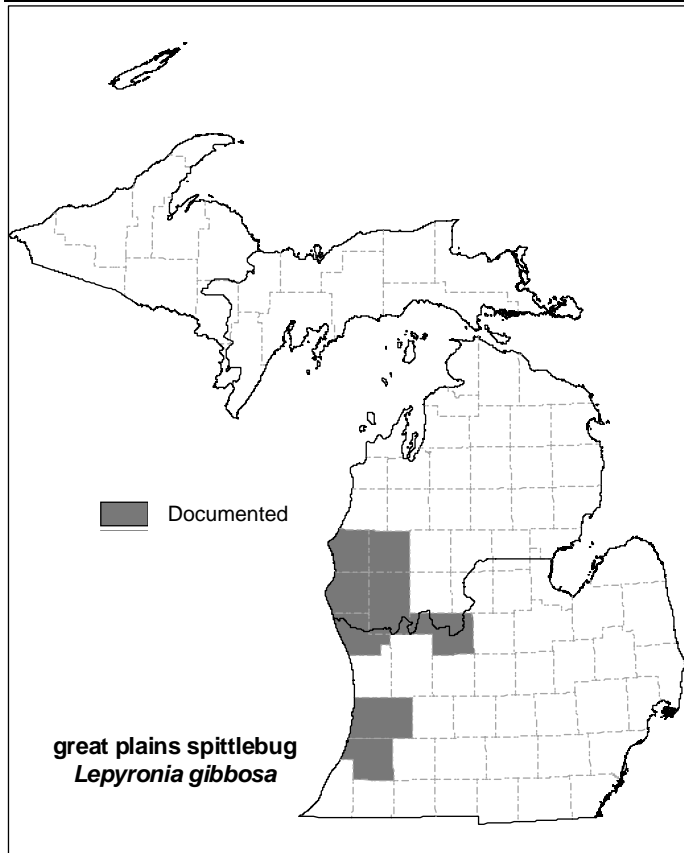
angular spittlebug (*Lepyronia angulifera*)

DISTRIBUTION & ABUNDANCE: State listed as special concern. Sparsely distributed across parts of the Southern Lower Peninsula. It is restricted to very specific habitat and vegetation and therefore occurs in isolated patches. It is considered uncommon to rare across its range.

ASSOCIATED LANDSCAPE FEATURES: prairie; lowland conifer; fen

ASSOCIATED THREATS: altered fire regime; incompatible natural resource mgmt; industrial/residential/recreational development; invasive plants & animals; lack of scientific knowledge; other biological interactions (decline in host plants, especially *Eleocharis*); pesticides & herbicides

COMMENTS: Need surveys to assess abundance and distribution; need basic life history information; need to identify threats. Prescribed fire is an important management tool, but care should be taken to ensure that occupied areas are only partially burned. Protection and recovery efforts need to address declines in host plants, especially *Eleocharis* sp.



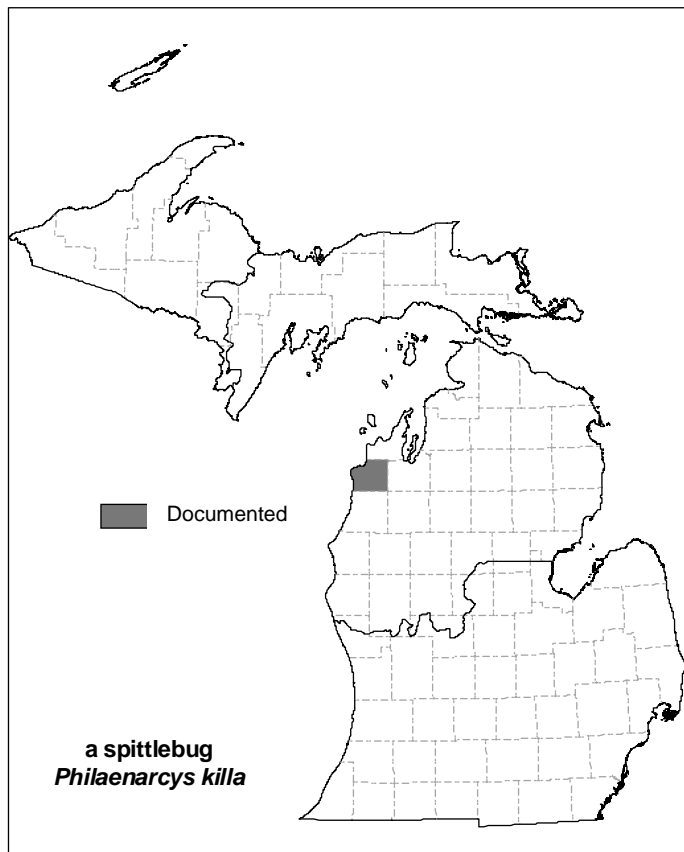
great plains spittlebug
(*Lepyronia gibbosa*)

DISTRIBUTION & ABUNDANCE: Occurs at numerous sites across 6 counties in the west central Lower Peninsula and sparsely in the southwest Lower Peninsula. It is locally abundant where found, but its host plants may be in decline in these areas. It is considered very rare in the State and may be critically imperiled. It is listed as threatened in Michigan, and it is a Forest Service sensitive species. This species may be rare across its range.

ASSOCIATED LANDSCAPE FEATURES: prairie; idle/old field; right-of-way; savanna; dry hardwood; dry conifer; forest opening; ephemeral wetland

ASSOCIATED THREATS: climate change; conversion to agriculture lands; altered fire regime; fragmentation; incompatible natural resource mgmt; industrial/residential/recreational development; invasive plants & animals; lack of scientific knowledge; non-consumptive recreation

COMMENTS: Need surveys to assess abundance and distribution; need basic life history information; need to identify threats. Prescribed fire is an important management tool, but care should be taken to ensure that occupied areas are only partially burned. ORV traffic should be redirected around occupied areas.



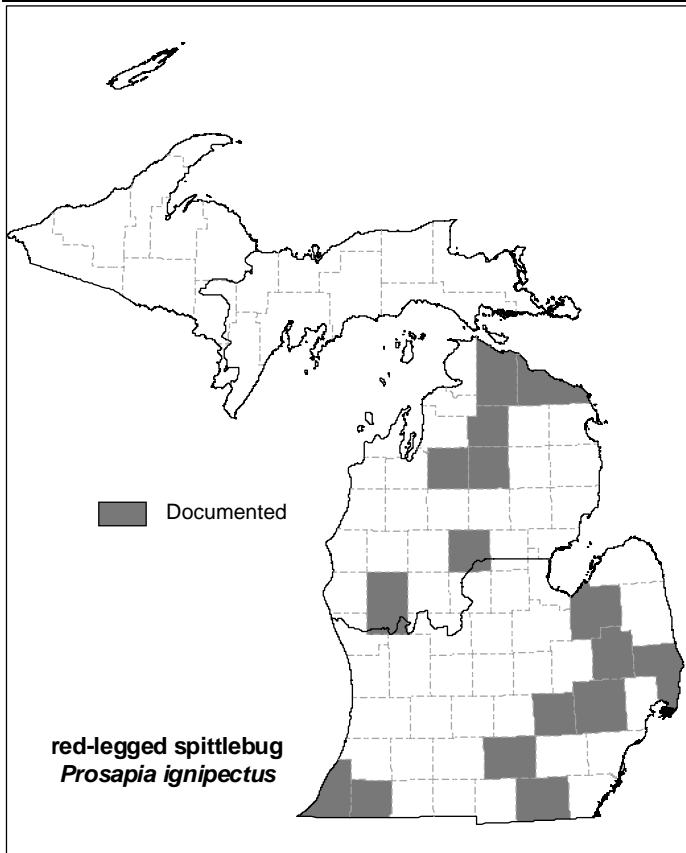
a spittlebug
(*Philaenarcys killa*)

DISTRIBUTION & ABUNDANCE: State listed as special concern. This species is extremely rare in Michigan and may be rare across its range.

ASSOCIATED LANDSCAPE FEATURES: prairie; idle/old field; right-of-way; savanna; upland shrub; coastal dune/beach

ASSOCIATED THREATS: lack of scientific knowledge; unknown

COMMENTS: Need surveys to assess abundance and distribution; need basic life history information; need to identify threats.



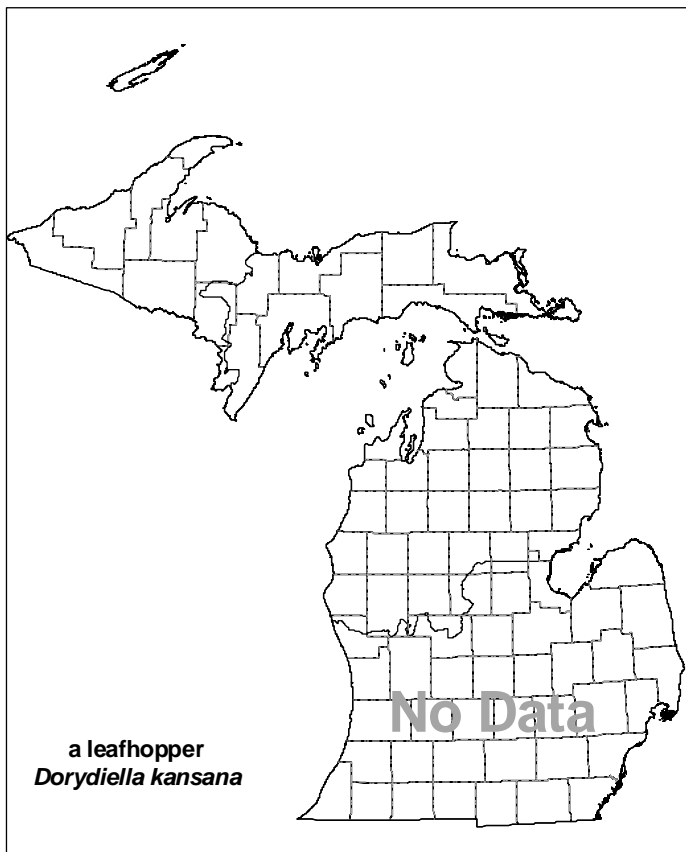
red-legged spittlebug
(Prosapia ignipectus)

DISTRIBUTION & ABUNDANCE: State listed as special concern. This species is rare in Michigan and may be rare across its range. Michigan may represent the core of this species range.

ASSOCIATED LANDSCAPE FEATURES: prairie; prairie; idle/old field; right-of-way; savanna; upland shrub; fen; alvar/rock

ASSOCIATED THREATS: altered fire regime; altered hydrologic regimes; incompatible natural resource mgmt; industrial/residential/recreational development; invasive plants & animals; lack of scientific knowledge; non-consumptive recreation; wetland modifications

COMMENTS: Need surveys to assess abundance and distribution; need basic life history information; need to identify threats. Prescribed fire is an important management tool, but care should be taken to ensure that occupied areas are only partially burned. ORV traffic should be redirected around occupied areas.



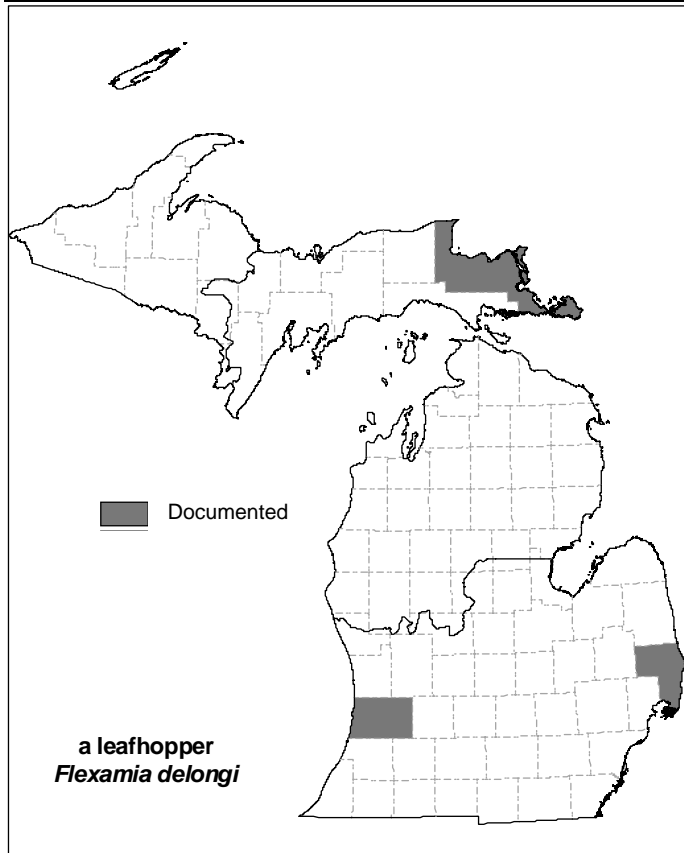
a leafhopper
(Dorydiella kansana)

DISTRIBUTION & ABUNDANCE: This species is extremely rare in Michigan and may be critically imperiled. Data is currently unavailable on its distribution and abundance. It is State listed as special concern.

ASSOCIATED LANDSCAPE FEATURES: prairie; coastal emergent wetland; coastal dune/beach

ASSOCIATED THREATS: conversion to agriculture lands; incompatible natural resource mgmt; lack of scientific knowledge; pesticides & herbicides; unknown

COMMENTS: Need surveys to assess abundance and distribution; need basic life history information. Relative severity of listed threats is not well known and other currently unknown threats may exist for this species; a threats assessment is needed for this species.



a leafhopper

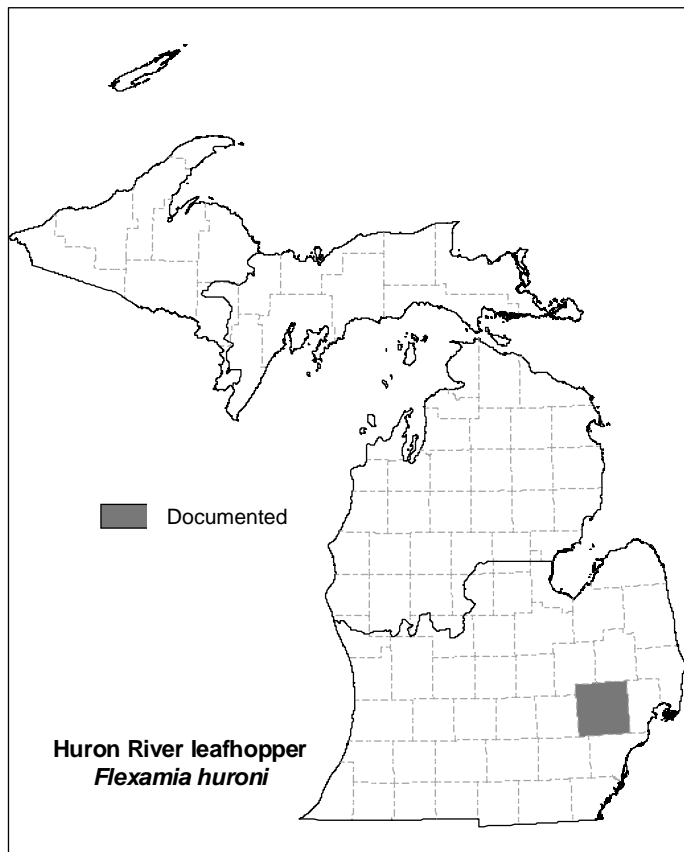
(*Flexamia delongi*)

DISTRIBUTION & ABUNDANCE: State listed as special concern, this species is extremely rare in Michigan and may be critically imperiled. Its range-wide status is currently undetermined.

ASSOCIATED LANDSCAPE FEATURES: prairie; alvar/rock

ASSOCIATED THREATS: conversion to agriculture lands; altered fire regime; fragmentation; altered hydrologic regimes; incompatible natural resource mgmt; industrial/residential/recreational development; invasive plants & animals; lack of scientific knowledge; non-consumptive recreation; wetland modifications

COMMENTS: Need surveys to assess abundance and distribution; need basic life history information; need to identify threats. ORV and foot traffic should be redirected around occupied areas. Prescribed fire is an important management tool, but care should be taken to ensure that occupied areas are only partially burned.



Huron River leafhopper

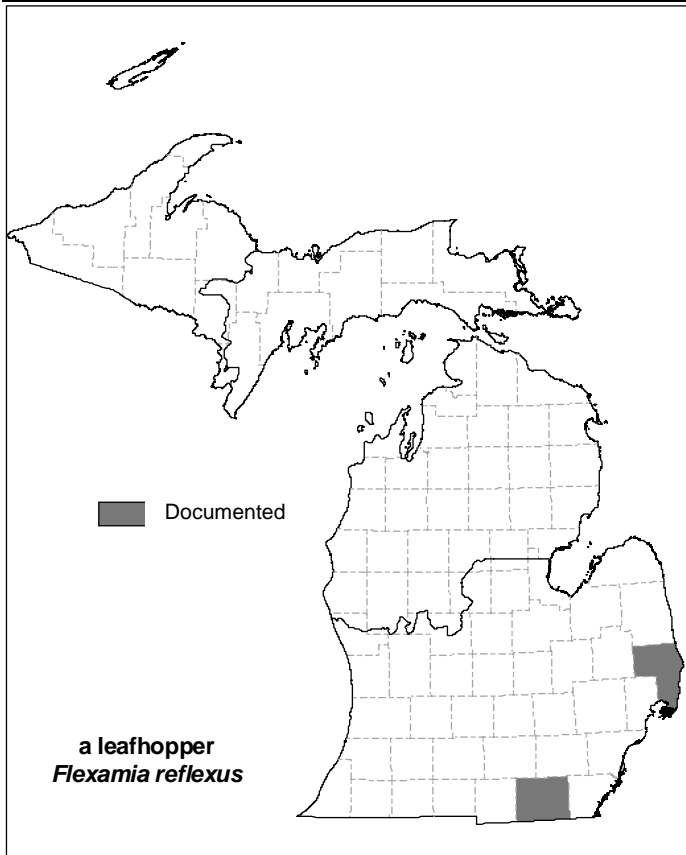
(*Flexamia huroni*)

DISTRIBUTION & ABUNDANCE: State listed as special concern, this species is known from only one location in southeast Michigan. This extremely rare species is dependent upon a State-threatened plant, mat muhly (*Muhlenbergia richardsonis*), that occurs in a globally imperiled natural community, prairie fen. The range-wide status of this species is currently undetermined.

ASSOCIATED LANDSCAPE FEATURES: prairie; fen

ASSOCIATED THREATS: conversion to agriculture lands; altered fire regime; altered hydrologic regimes; industrial/residential/recreational development; invasive plants & animals; lack of scientific knowledge; non-consumptive recreation; other biological interactions (loss of host plant (*Muhlenbergia richardsonis*)); pesticides & herbicides; wetland modifications

COMMENTS: Need surveys to assess abundance and distribution; need basic life history information; need to identify threats. The protection and restoration of host plant populations, the State threatened mat muhly (*Muhlenbergia richardsonis*), is critical in the conservation of this species.



a leafhopper

(*Flexamia reflexus*)

DISTRIBUTION & ABUNDANCE: State listed as special concern. This species is extremely rare and critically imperiled in Michigan. The range-wide status of this species is currently undetermined.

ASSOCIATED LANDSCAPE FEATURES: hayland; pasture; right-of-way; savanna; fen; other

ASSOCIATED THREATS: conversion to agriculture lands; altered fire regime; altered hydrologic regimes; incompatible natural resource mgmt; industrial/residential/recreational development; invasive plants & animals; lack of scientific knowledge; wetland modifications

COMMENTS: Need surveys to assess abundance and distribution; need basic life history information; need to identify threats.