



United States Department of Agriculture

Biology Technical Note

Natural Resources Conservation Service - Indiana - October 2015

Milkweed Assessment Tool

INTRODUCTION

Monarchs face many risks that are resulting in declining populations in both the eastern and western parts of their North American range. The largest impacts come from the loss of habitat for breeding, migrating, and overwintering. In addition, pesticides used to control weeds, insects and plant pests may have harmful, unintended consequences for monarchs and other pollinators.

Every monarch that successfully migrates to wintering sites in Mexico or along the California coast begins its life as an egg on a milkweed plant, and depends on nectar from many sources across miles of migratory flyway. Quality monarch habitat requires a high abundance and diversity of milkweed for breeding, abundant nectar plants for fueling migration, minimal pressure from invasive plants, and proper land management.



For the purposes of this tool, **500 Milkweed plants per acre** is the minimum necessary to provide adequate breeding habitat for Monarch Butterflies. The following are some of the common Milkweeds found in Indiana.

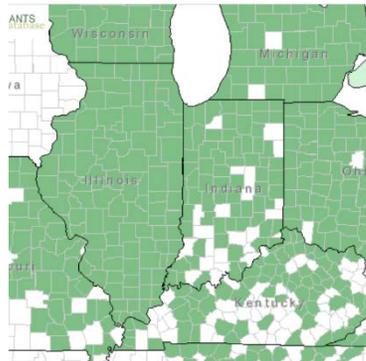
Asclepias syriaca Common milkweed



Photo: Mike Halverson



Photo: Steven Katovich, USDA Forest Service, Bugwood.org



USDA NRCS PLANTS Database
Map: USDA-NRCS East Remote Sensing Laboratory in conjunction with the National Plant Data Team.

Habitat: Prairies, old fields, and margins of woods, in the flood plains of lakes, ponds, or waterways, and along creek banks, roadsides, and railways. Grows in sandy, clay, or rocky calcareous soils.

Description: Plants are tall with stout stems and broad, thick leaves. Flowers are fragrant and are borne in multiple clusters per plant. Common milkweed spreads clonally, via underground rhizomes. Common milkweed is the most abundant milkweed in the midwestern and northeastern United States and the most frequently used host plant in the eastern monarch's breeding range. Laboratory analyses of monarch tissues have revealed that the majority of butterflies overwintering in Mexico fed on common milkweed as caterpillars (Malcolm et al. 1993; Seiber et al. 1986). The loss of this important host plant from agricultural fields in the Midwest is likely having a significant impact on monarch breeding potential in the region (Brower et al. 2012; Pleasants and Oberhauser 2012). Flower color: Corolla and corona both a muted pink, the corona usually of a lighter shade.

Bloom time: May – August
Maximum height: 7 feet
Estimated seeds per pound: 61,700

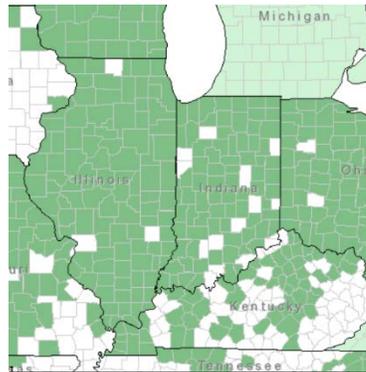
Asclepias incarnata ssp. *incarnata* Swamp milkweed



Photo: David Cappaert, Michigan State University, Bugwood.org



Photo: MJ Hatfield



USDA NRCS PLANTS Database

Map: USDA-NRCS East Remote Sensing Laboratory in conjunction with the National Plant Data Team.

Habitat: Wet areas of meadows and prairies, in sloughs and roadside ditches, along the borders of swamps, marshes, ponds, and lakes, along the edges of streams and rivers.

Description: Swamp milkweed prefers wet to consistently moist soil, but has some tolerance for drier soil conditions. It can be incorporated into a variety of wetland enhancement and restoration projects. Stems are smooth and usually branched. Leaves are numerous, opposite, and narrow. Another subspecies, *pulchra*, occurs in Texas and several eastern states but not in the central United States. Swamp milkweed is frequently used by monarchs as a host plant.

Flower color: Corolla bright pink, corona light pink to white

Bloom time: June – September

Maximum height: 5 feet

Estimated seeds per pound: 86,800

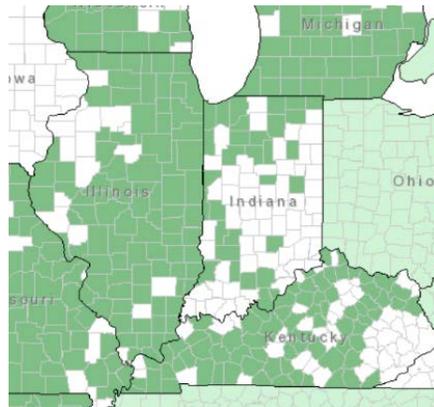
Asclepias tuberosa ssp. *interior* Butterfly milkweed



Photo: Mike Halverson



Photo: Allen Casey, Missouri NRCS



USDA NRCS PLANTS Database

Map: USDA-NRCS East Remote Sensing Laboratory in conjunction with the National Plant Data Team.

Habitat:

Well-drained sandy, loamy, or rocky soils in open woods, prairies, savannas, old fields, and along roadsides.

Description: Drought-tolerant, broadly adaptable, and one of the most common and

widely distributed milkweeds in the Ozarks, southern Great Plains, and the central Midwest. Another subspecies, *rolfsii*, occurs in the southeastern United States. It is the only milkweed species lacking the milky sap that is characteristic of the genus. Plants typically have multiple stems and often have a bushy appearance. Stems are covered in short, soft hairs. Leaves are also hairy, particularly on the undersides. Butterfly milkweed is an important source of nectar for many insects, but may be a sub-optimal larval host plant for monarchs. Though monarch caterpillars can complete their development on butterfly milkweed, anecdotal evidence and preliminary studies suggest that female monarchs do not prefer to lay eggs on the species (Chip Taylor, Monarch Watch, personal observations).

Flower color: Variable, ranging from yellow to orange to red. Most typically, the corolla and corona are both bright orange.

Bloom time: May – September

Maximum height: 3 feet

Estimated seeds per pound: 69,600

Asclepias sullivantii Prairie milkweed



Photo: R.W. Smith, Lady Bird Johnson Wildflower Center



Photo: R.W. Smith, Lady Bird Johnson Wildflower Center



USDA NRCS PLANTS Database

Map: USDA-NRCS East Remote Sensing Laboratory in conjunction with the National Plant Data Team.

Habitat: Sandy, loamy, or rocky calcareous soils of lowland and upland prairies, wet meadows, creek banks, and river bottoms. Also grows along roadsides and railways.

Description: Plants are sturdy with thick stems. Leaves are opposite and broad and typically ascend at a pronounced angle. As compared to showy and common milkweed, this species' stems, leaves, and fruits are hairless. Prairie milkweed flowers are larger than those of common milkweed but smaller than showy milkweed flowers. This species reproduces clonally, through the spreading of underground rhizomes.

Flower color: Corolla and corona both medium pink, the corona usually of a lighter shade

Bloom time: June – August

Maximum height: 4 feet

Estimated seeds per pound: 84,500

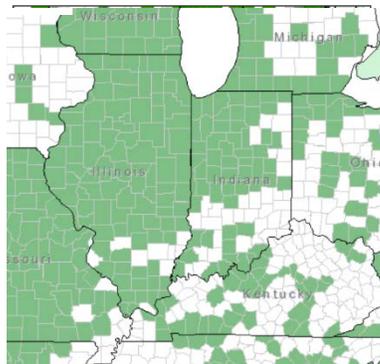
Asclepias verticillata Whorled milkweed



Photo: Chris Evans, Illinois Wildlife Action Plan, Bugwood.org



Photo: Chris Evans, Illinois Wildlife Action Plan, Bugwood.org



USDA NRCS PLANTS Database

Map: USDA-NRCS East Remote Sensing Laboratory in conjunction with the National Plant Data Team.

Habitat: Sandy, clayey, or rocky calcareous soils of prairies, glades, dry open woods, fields, flood plains, and hillsides.

Description: Plants are slender and the leaves are narrow, linear, and typically arranged in a whorled pattern around the stem. This species reproduces clonally, through the spreading of underground rhizomes. Whorled milkweed is one of the more toxic milkweed species; livestock managers should take appropriate measures to prevent animals from consuming the plants.

Flower color: Corolla white, green, or brown; corona white

Bloom time: June – September

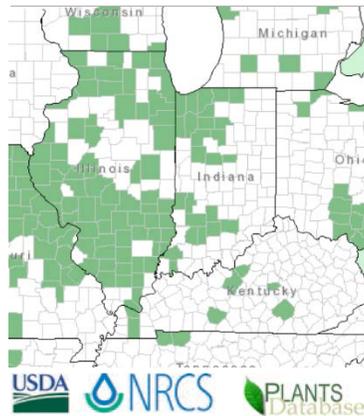
Maximum height: 3 feet

Estimated seeds per pound: 182,000

Asclepias hirtella Tall green milkweed



Photo: Tom Barnes, University of Kentucky



Map: USDA-NRCS East Remote Sensing Laboratory in conjunction with the National Plant Data Team.

Description: Stems are stout. Leaves are long and narrow, mostly alternate, and hairy. There are typically multiple flower clusters per plant. Within the target region, this species is most abundant in Missouri.

Flower color: Corolla green, often tinged with purple; corona green, cream, or lavender

Bloom time: May – August

Maximum height: 3 feet

Estimated seeds per pound: 64,300

Habitat: Upland tallgrass prairie, lowland prairie, prairie hay meadows, glades, along roadsides, sometimes in marshy areas. Grows in rocky, sandy, or clay soils.

REFERENCES

ALL MILKWEED IDENTIFICATION: Pollinator Plants of the Eastern U.S.: Native Milkweeds, The Xerces Society, NRCS, and the Monarch Joint Venture http://www.xerces.org/wp-content/uploads/2013/07/Milkweeds-of-Central-US_plus-vendors_XercesSociety.pdf

INSTRUCTIONS

This method will help determine how many Milkweed plants are present per acre of area assessed:

1. Plant surveys should be conducted in the late-spring to mid-summer.
2. If the habitat on a site varies greatly, divide the sites into smaller stands.
3. Assess each stand using the Belt Transect method described below.
4. Determine how many belt transects you will conduct within each stand. This will depend on the size of the stand:
 - 3 transects for stands under 2 acres,
 - 5 transects for stands 2 to 10 acres, and
 - 10 transects for stands 11 or more acres.

Belt Transect

1. Measure off a 72 ft. x 6 ft. (or 24 paces x 6 ft) plot that is representative of area.

This area is 1/100th of an acre.

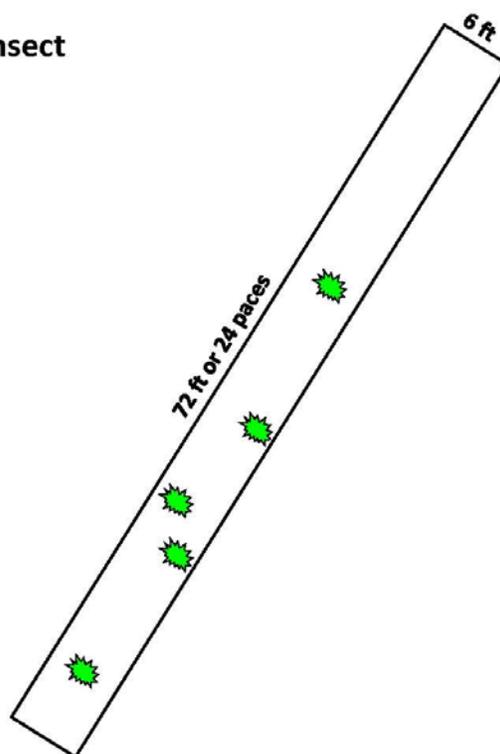
2. Count the number of target plants that are rooted within the plot.

3. In this example,

there are 5 plants within the plot :

(5 plants X 100 = 500 plants/acre)

****Multiple transects must be taken to ensure a representation of the site. Add all totals and divide by the number of transects taken for a representative density measurement.**



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