Glossary

Flying: behavior when butterflies are in flight during adult monarch counts or miscellaneous observations within the monitoring plot and within 5 m of the ground.

Flying high: behavior recorded when observed monarch is flying more than 5 m high over the plot and it is unknown whether the monarch has used or will use plot resources.

Mating: behavior during adult monarch counts or miscellaneous observations within the monitoring plot when male and female adults are observed copulating.

Milkweed plant: all above-ground stems or stalks of milkweed originating from a visually-identifiable, common central point in the ground. A single milkweed plant (as defined in this program) may be composed of multiple stems or single stalks depending on the species.

Milkweed stem: stalk growing from a point in the ground, joined to a centralized part of a plant or location above ground. In multi-stemmed species, stems from the same plant can be separated by a bit of soil (e.g. Asclepias tuberosa), but still emanate from the same central location. In single-stemmed species, milkweed plants grow as single stems (or ramets) that are separated by soil (e.g. Asclepias syriaca). Even though these plants may be connected underground by rhizomes, for these species it is impossible to tell which ramets are connected without digging them up so each stem is considered an individual plant for this program.

Monarch adult counting frame: a 3-dimensional space used to count adult monarch butterflies projected 5 m on either side of and in front of an observer walking a survey route as well as 5 m above the observer.

Monarch Block: 10 km by 10 km cell within a national grid that is numbered; forms the first stage of the spatially balanced random sampling framework for the project.

Monitoring plot (plot): the area delineated for monitoring, anchored by the sample point; default design is 200 m by 50 m (1 ha). Alternative plot layouts depend on sample stratum and site size or shape.

Nectaring: a behavior when adult monarch butterflies are perched on a plant and actively extending their proboscis into a flower to obtain nectar.

Online sampling map: the interactive map that is used to select sample points and establish monitoring plots.

Ovipositing: a noted behavior of a female adult monarch arching the abdomen and depositing eggs (most typically on milkweed plants).

Plant sampling frame: A (0.5 m x 1 m) frame constructed of PVC pipe that is divided through the center and placed on both the right and left side of a transect line to form a 1 m² subplot (for a total area that measures 0.5 m x 2 m). The frame is used in vegetation surveys to measure nectar plant frequency and milkweed density.

Adult Monarch Survey: a modified Pollard walk, a technique of slowly walking a transect (1 m per 2 sec), counting adult monarch butterflies according to perpendicular distances from the transect line and recording their behaviors.
Resting: a noted behavior of an adult monarch when perched on a plant or other surface with no sign of mating, ovipositing, or nectaring. Term also includes roosting, a behavior commonly used to describe resting during migration, often by groups and in woody vegetation.

Roadside width: a distance measured from a roadway edge where vegetation begins perpendicular to the road until an obvious change in vegetation or ownership occurs.

Sample stratum(a): the land cover types that form the subdivisions for the allocation of points in the second stage of the sampling framework.

Sample point: a point location from which a monitoring plot is established.

Site Type: the land cover types that form the subdivisions for the allocation of points in the second stage of the sampling framework (also known as sample strata).

Subplot: The area defined by the plant sampling frame, a 1 m² (0.5 m x 2 m) rectangle, delineated on two sides of a transect using a subdivided measuring frame and used to measure frequency of blooming plants and milkweed density.

Survey: inventory or monitoring activity usually to record the distribution or abundance of a natural resource or organisms.

Transect: a line within a monitoring plot, often with intervals for placing subplots to monitor milkweed and blooming plants. Transects are typically laid out with a 100-meter measuring tape, but in some instances could be placed between field markers and paced.