

I-75 Sullivant's Milkweed Scoping & Transplant for the Michigan Department of Transportation; Otter Creek to Laplaine Interchange. Monroe County, Michigan. MDOT Project #204085.



Prepared By:

Amanda K. Klain and Phyllis J. Higman
Michigan Natural Features Inventory
Michigan State University Extension
P.O. Box 13036
Lansing, MI 48901

Prepared For:

Michigan Department of Transportation

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Cover photo: Sullivant's milkweed along the I-75 corridor, flagged for transplant, Monroe County, Michigan, by Amanda K. Klain.

All photographs in this report were taken by Amanda K. Klain.

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Introduction and Methods

Project #204085 is the 3.5 mile stretch from Otter Creek Road to just north of the I-75 Laplaignance interchange in Monroe County (Fig. 1). The rare plant surveys were done in 2021, in which previously mapped state threatened Sullivant's milkweed (*Asclepias sullivantii*) were relocated but not flagged. The objectives of the 2022 field surveys were to relocate and pin flag ~150 Sullivant's milkweed individuals to transplant to a suitable site to fulfill NEPA and EPA requirements prior to construction. The intention was to transplant the milkweeds to the Morin wetland mitigation site at Bay Creek Rd, just south of Erie State Game Area (Fig. 2). Approximately 200 Sullivant's milkweed were transplanted there in 2019 and 2020.



Figure 1. Project location showing the corridor in red.

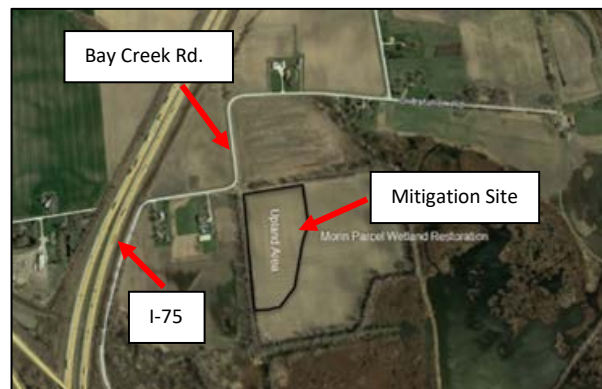


Figure 2. Morin mitigation site at Bay Creek Rd.

Relocation of Sullivant's milkweed plants was conducted by loading a Samsung tablet with maps and previously known locations, navigating to the points, and pin flagging individual or closely grouped plants noting how many there were. Surveys were conducted on August 25 within the project area and further south as needed.

The intended Morin mitigation site was scoped for emergence of previously planted Sullivant's milkweed and to assess the site conditions to determine optimal timing for moving the new transplants.

Results

Only 56 plants were relocated in the project area on August 25, 2022, with about 25 more relocated in a quick search south of the project area along I-75 on the west side. Additional surveys were conducted on 9/17/22, 9/28/22, and 10/14/22 between the Otter Creek and Luna Pier to try to find additional individuals. A total of 102 plants were pin flagged for transplant between Laplaignance and Luna Pier Road.

The Morin mitigation site assessment revealed that conditions for transplant were not optimal. The lower terrace area was covered in dense, waist-high vegetation with woody encroachment

(Fig. 3), and while the upper terrace had some bare clay areas, only one individual out of the ~200 Sullivan's milkweed plants that were transplanted there in 2019 and 2020, was observed. The pink flags that marked each transplanted individual were mostly still present (Fig. 4), but many of the flags had teasel plants at their base, with no sign of the milkweed. The presence of teasel was likely an unintended result of propagules that came in with the transplants, which were dug up from the I-75 ROW where teasel was abundant.



Figure 3. The Morin mitigation site showing dense vegetation and woody encroachment in the lower terrace.



Figure 4. Upper terrace at the Morin site showing an old pin flag and no milkweed.

While the potential for future emergence of more Sullivan's milkweed at the Morin site is unknown, no management of the site is planned and the likelihood for success of new transplants was deemed to be low. In consultation with MDOT it was decided that we would look for alternative sites.

Several sites were considered. A brief visit to Crosswinds Marsh at Oakville and Haggerty Roads on 9/9/22, revealed this site to be unsuitable due to the abundance of non-native phragmites and cat-tails. Erie marsh and Sterling State Park (SSP) were also considered and contacted. Since SSP had participated in Sullivan's milkweed restoration efforts in the past with positive results, we selected that option. The Park agreed to having more Sullivan's milkweed transplanted to their sites and offered to help if available. Information and maps of existing transplanted individuals as well as the areas that would most likely be the best places for incoming Sullivan's milkweed were shared (Fig. 6).

Sterling State Park was visited on September 9, 2022, to scout all the previous transplant areas for suitability. The numbered areas 1-3 in Figure 6 were determined to be hard to access with current MNFI equipment, vehicles, and available staff. Unlike the Morin site, moving plants to these areas would involve transporting plants across uneven terrain for considerable distances

without the use of our regular vehicles. Area #2 was estimated to be the least suitable habitat for transplanting, due to the extent of invasion by Canada thistle (*Cirsium arvense*) and narrow-leaved cat-tail (*Typha angustifolia*), which are chemically treated in the park.



Figure 5. Sterling State Park showing previous Sullivant's milkweed transplant sites outlined in green. Sites 1-3 were suggested as likely to be most suitable; particularly sites 1 and 2 in the vicinity of the red arrows.



Figure 6. Dry, compacted soils at potential transplant site.

The soils were also evaluated for digging at each of the sites and were found to be extremely compacted, dry, and nearly impenetrable. After revisiting SSP again twice on September 16 and 28 and seeing no improvement in the dry clay soil compaction, it was decided to postpone the transplant until 2023.

Discussion

The challenges with conducting the Sullivan's milkweed transplant in 2022 were unanticipated, particularly the impenetrable soils, requiring a rethinking of the best mitigation strategy for this portion of the I-75 Reconstruction Project.

Milkweeds (*Asclepias* spp.) are warm-season species and generally do not appear above ground in southeast Michigan until late May/early June, which would be an optimal time to transplant. Individual plants should be emerging with visible new shoots before moving them, so earlier transplanting is not recommended. Fall is equally optimal, when the plants have translocated nutrients to the roots.

Prior to any transplanting, the Morin site should be reassessed to determine if any more milkweeds have emerged, and to re-evaluate the suitability of that site. Likewise, the sites at SSP should be re-scoped to determine the most suitable transplant areas, avoiding those with significant invasive species infestations. Suitability of the various sites would be determined by the success of previous transplants, the density of vegetation, encroachment of woody species, future management plan, and the abundance of invasive species such as phragmites, reed canary grass, and Canada thistle.

After evaluation and consultation with SSP and MDOT, the optimal transplant time and the most suitable sites can be decided upon, and a transplant plan finalized. Currently there are 102 pin flagged plants in the I-75 ROW on the west side between the I-75 Laplaine interchange and Luna Pier. If additional plants are required, they are best detected during July-August and are most likely to be found along the same stretch of I-75. Previous planting methods are recommended, which include digging the plants up with large chunks of soil (12" X 12") equivalent to a three- or five-gallon pot size and moving the soil with the transplants to the new site. It is also recommended that follow-up control of invasive species such as teasel be conducted, and the sites monitored and watered, as needed, for a two-week period after transplanting.

Sterling State Park remains enthusiastic about planting more Sullivan's milkweed at their sites and they also conduct ongoing stewardship at the park. Coordination with SSP will be necessary so that suitable equipment, vehicles, and potentially volunteers, can be secured. Assuming that timing can be worked out, SSP is willing to provide some of their staff time and equipment to assist. MNFI will work with MDOT and SSP to determine the best mitigation option, and budget accordingly.

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