



BUTTERFLY CONSERVATION INITIATIVE

Butterfly Habitat Creation at the Wilds Progress Report December 2004

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Summary

The seeding of over ten acres of meadow habitat has been completed at *the Wilds* in the area designated as The Butterfly Habitat. Six acres were planted in the Fall of 2003 and 4 acres were planted in the Spring of 2004. A diversity of plant species was used to specifically fulfill caterpillar and adult energy needs. We are currently managing these plantings through mowing, hand weeding, and light herbicide applications. Enhancements have also been made to the adjoining wetland and woodland areas, which are being incorporated as part of the total butterfly habitat area. A loop trail has been developed through all the habitat areas and will continue to be improved throughout the next season. In order to keep track of short-term, long-term, and seasonal use by local butterflies, a monitoring transect has been set up and is being run weekly from early spring to late summer. Compiled data from 2004 is being included as part of this report.



Wetlands adjoining the 6-acre meadow planted in Fall 2003

Meadow Habitat

After a winter cover crop of winter rye and a 3rd herbicide (glyphosate) treatment in early spring, seeding of the final 4 acres was done in early June using a no-till drill as well as by hand. The seeding rate was 10 lbs/acre and included the following species: butterfly weed, New England aster, partridge pea, lanced-leaved coreopsis, purple coneflower, rattlesnake master, ox-eye sunflower, bushclover, great blue lobelia, wild bergamot, maximillion sunflower, downy sunflower, foxglove beardtongue, joe-pye weed, common milkweed, swamp milkweed, Virginia mountain mint, black-eyed susan, sweet black-eyed susan, stiff goldenrod, side-oats grama, Canada wild rye, and little bluestem.

Mowing was done around the edges of the entire 10-acre meadow habitat late June to reduce the spread and encroachment of weeds from edges. Additional mowing management was done the third week of July and in early September. Plants were mowed to 6-8 inches in height. Areas that were not as effected by



4-acre prairie planted in June 2004

weeds were left un-mowed. Much of the 6-acre area that was planted in the fall of 2003 did not need mowing and several desirable plant species bloomed including the native annual, tickseed sunflower (*Bidens polylepis*), which gave a great late summer display.



Close-up of tickseed sunflower at Butterfly Habitat

Based on informal vegetation surveys, the most commonly occurring weeds in the planted areas were Canadian thistle, birdsfoot trefoil, tall fescue, Canadian goldenrod, teasel, ragweed, queen anne's lace, and old witch grass. They will continue to be monitored, mowed, and spot treated throughout 2005.

Wetland Habitat

Along the southern edge of the meadow habitat, there is approximately 3 acres of meandering wetland habitat. The existing vegetation includes cattails (*Typha angustifolia*, *T. latifolia*), willows (*Salix eriocephala*, *S. exigua*, *S. nigra*), rushes (*Juncus acuminatus*, *J. dudleyi*, *Eleocharis erythropoda*, *E. obtuse*), and sedges (*Carex annectens*, *C. frankii*, *C. granularis*, *C. lurida*, *C. molesta*, *Scirpus atrovirens*, *S. pendulus*, *S. validus*).



Wetland at Butterfly Habitat

In late June, volunteers, interns, and staff planted additional plant species such as swamp milkweed (*Asclepias incarnata*), cardinal flower (*Lobelia cardinalis*), blue iris (*Iris versicolor*), Culver's root (*Veronicastrum virginicum*) marsh mallow (*Hibiscus mosheutos*), and button bush (*Cephalanthus occidentalis*). This summer, 15 monarch larvae were counted on swamp milkweeds that had been growing in the habitat for less than 1 year. We have subsequently increased our efforts to collect more swamp milkweed seeds and will be planting more next year. We will also continue to enhance the wetland habitat through further plantings and seedings.



Monarch larva and adult butterfly on swamp milkweed

Woodland Habitat

A large woodland of approximately 15 acres flanks the southwest end of the habitat. Fortunately, these woodlands were not directly impacted by mining and are still home to a number of native woodlands and herbaceous species, many of which are important to butterflies. For instance sassafras and spicebush are very common in the woods and are host plants for the spicebush swallowtail. Other common trees such as cherry and tulip poplars are good host plant food for

eastern tiger swallowtails, viceroys, and morning cloaks. There are many other examples, and we are fortunate to have such a diverse woodlands near the habitat restoration area which can contribute to butterfly survival and overall success of the project.

In September we worked on a project with the Rural Action Forestry Program to restore and reestablish some of the understory medicinal herbaceous plant communities. We planted bare roots of goldenseal, black cohosh and seeded ginseng. We also cleared brush and created a walking path through the area so that students and visitors can learn about this part of the forest community.



Rural Action Forestry volunteers help clear and prepare woodland habitat for understory planting

Trail Development

A ¾ mile long loop trail has been developed and passes through each of the three habitat areas described above. It is 10 feet wide and is maintained through regular mowing. Culverts are being strategically placed in areas that are particularly wet, and bridges have been built across the stream and wetland for easier passage. The trail will be officially opened to the public beginning in the Spring of 2005.

Use as a classroom

We have already had several classes utilize the butterfly habitat for learning about insects, life cycles, ecology and restoration. Teachers and professors have a unique opportunity to bring their classes out to the habitat and teach students first hand about differences in habitats and the processes and species that are associated with them. Students are encouraged to bring their nets to catch and learn up close and personal about the insects that utilize the habitat.



A high school zoology class nets insects and takes field notes at the habitat

Volunteers

We have been fortunate to have several volunteer groups contribute to the habitat through planting, seed collecting, weeding and trail work.



A veterinary volunteer group helps remove shrubs from the meadow habitat

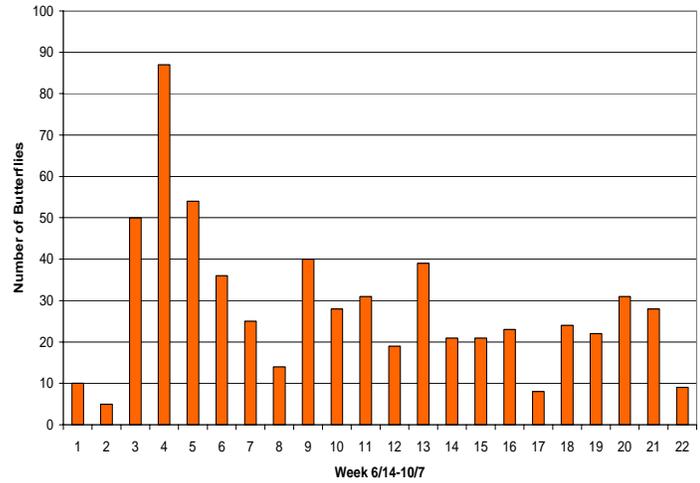


An Ohio State volunteer group helps collect seed from the butterfly habitat

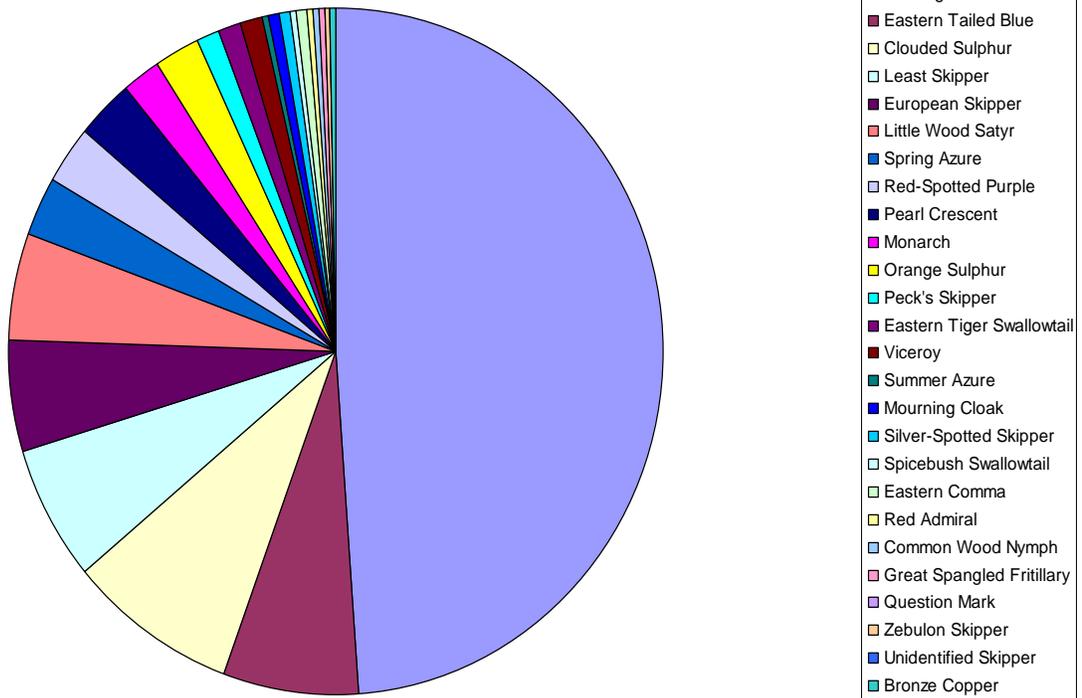
Monitoring

In order to keep track of the butterfly species that are using the habitat area, we have set up a long-term monitoring transect. The transect is a fixed path that is divided into sections according to habitat changes and is walked weekly to survey and record butterflies and larvae. We surveyed the habitat weekly from May 14-Sept 10th and are providing the results as part of this report. As the habitat matures and more flowering plants become established, we hope to see a correlation with numbers and overall diversity of butterfly species.

Weekly Butterfly Numbers



Percent total of each species counted



A total of 625 butterflies were counted during transect walks from May 14- Sept 10 2004 and included 26 different species. The legend lists the species in descending order with the most common at the top. The pie chart shows the distribution of each species in coinciding order.

Future Development

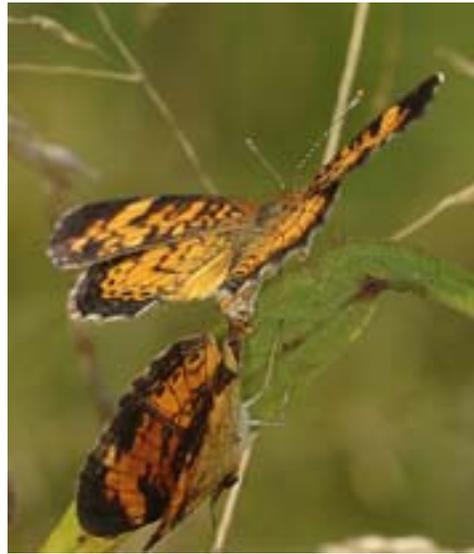
The habitat will officially be open to the public starting in May of 2005. A parking area will be provided and people will be able to take a self-guided tour by foot through

the mowed trail. We hope to eventually have interpretive signs and literature available for students and guests, but we will need to pursue further funding and sponsorship.

We will continue to manage the habitat through mowing and weeding, trail development, planting, seed collecting, as well as continue weekly butterfly monitoring. Our goal is to eventually expand the area to 200 acres of restored habitat. We will continue to encourage teachers and professors to bring their classes out to the habitat and will always welcome volunteers to assist with restoration and overall improvements.

Acknowledgements

We would like to especially thank the George Gund Foundation for their sponsorship of this project. We could not have done it without their generous support. We would also like to acknowledge our other partners including The American Zoo Association and the five zoological parks in Ohio (Akron Zoological Park, Cincinnati Zoo and Botanical Garden, Cleveland Metroparks Zoo, Columbus Zoo and Aquarium and the Toledo Zoo). In addition, a special acknowledge goes to Matt Berry, Assistant Restoration Ecologist at the Wilds, for running the weekly butterfly transects and his continued hard work at the habitat.



A mating pair of pearl crescent butterflies



Meadow habitat in bloom during late summer



An ecology class from Denison University takes a closer look at a butterfly