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**Conservation of Mitchell's Satyr Butterfly (*Neonympha m. mitchellii*)  
and Eastern Massasauga Rattlesnake (*Sistrurus c. catenatus*)  
in Southwest Michigan: Year Two Progress Report - 2001-2002**



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## **Project Goal**

This project covers a three-year period to develop and implement a comprehensive long-term landowner contact and education program targeted towards the conservation of remaining Mitchell's satyr (*Neonympha m. mitchellii*) populations and associated rare species such as the eastern massasauga rattlesnake (*Sistrurus c. catenatus*). Unfortunately, the 17 known Mitchell's satyr populations are located in small isolated sites spread across southern Michigan. This type of scattered distribution has made it challenging to develop long-term contacts with landowners, build strong relationships, and provide the necessary information and stewardship resources to protect the satyr and associated rare species.

## **Strategy**

MNFI is working with the Southwest Michigan Land Conservancy (SWMLC) to most effectively accomplish the goals of this project. SWMLC is a regional land conservancy located in Portage, Michigan whose mission is to protect the diversity, stability, and beauty of southwest Michigan by preserving its natural and scenic lands. SWMLC works in Allegan, Barry, Berrien, Branch, Calhoun, Cass, Kalamazoo, St. Joseph, and Van Buren Counties. They have a total of 22 preserves and 20 conservation easements spread across 8 counties protecting approximately 3,263 acres and they are currently involved in several large-scale conservation projects, such as the Michigan Dune Alliance Project, the Four Township Water Resource's Council Project, and the Paw Paw River Project. SWMLC also has a strong network of members throughout southwest Michigan, a stewardship committee to assist with natural resource surveys and site management, and expertise in land protection. SWMLC is currently working with us as a subcontractor to accomplish the objectives of this project. Ten of the 17 known satyr sites are within their jurisdiction, are located on private land and are not managed by any other conservation organization.

## **Objectives**

Objectives identified for the second year of this project to accomplish this goal include:

- 1) Monitor populations of Mitchell's satyr adults at all known sites in the SWMLC region during the flight period and conduct systematic de novo surveys for Mitchell's satyr on lands with suitable habitat that are adjacent to existing satyr populations in southwest Michigan.
- 2) Inform targeted landowners in southwest Michigan that their property contains or provides suitable habitat for Mitchell's satyr butterfly and other rare animals and plants.
- 3) Provide landowners with ecological and management information to enhance awareness of special habitat features that occur on their property and to help develop conservation-based land use decisions.
- 4) Offer landowners in southwest Michigan the opportunity to voluntarily protect Mitchell's satyr, its habitat, and associated rare species that occur on their property.
- 5) Initiate formation of a volunteer stewardship team at each Mitchell satyr site in southwest Michigan.
- 6) Develop site conservation plans for four of the highest priority sites.
- 7) Initiate the development of site conservation plans for the remaining Mitchell's satyr sites in the SWMLC region.
- 8) Develop strategies and prepare for implementation of identified stewardship activities at select sites scheduled for FY2002-2003.

## **Procedures**

Procedures identified to address the objectives of this project include:

- 1) SWMLC will conduct surveys for Mitchell's satyr, massasauga rattlesnake, and other associated rare species at known sites. SWMLC will visit each occupied satyr site between 2-3 times during the flight period to conduct meander counts
- 2) SWMLC will identify landowners adjacent to known Mitchell's satyr sites with potential habitat, provide initial biological and protection information, and request permission to visit with landowners and survey their property.
- 3) SWMLC will visit landowners at known Mitchell's satyr sites, develop long-term relationships with landowners and provide landowners with detailed ecological, management, and protection information.
- 4) SWMLC will provide information to landowners about ways to voluntarily protect Mitchell's satyr, its habitat and associated rare species through non-legally binding agreements such as a registry or through permanent legally binding options such as conservation easements, gifts or acquisition.
- 5) SWMLC will initiate formation of voluntary stewardship teams for each site by providing training to interested volunteers on the identification, status and ecology of the Mitchell's satyr butterfly and associated species as well as protocol for conducting surveys.

- 6) SWMLC will work with MNFI's Conservation Planner to develop site conservation plans for the four highest priority sites based on methodology developed by The Nature Conservancy.
- 7) SWMLC will work with MNFI's Conservation Planner to begin work on the remaining site conservation plans.
- 8) SWMLC will work with MNFI, USFWS and the Mitchell's Satyr Working Group to develop appropriate management strategies and apply for the necessary permits to conduct stewardship activities.

### **Project Coordination**

On September 16, 2002 staff from both SWMLC and MNFI met to review the results of the 2002 surveys, to discuss monitoring protocols and to prioritize sites for stewardship in 2003 and 2004. Nicole Hill, the key project leader at SWMLC resigned from her position on October 16, 2003. Her project responsibilities were assumed by Jody Simoes and Nate Fuller from SWMLC. Both of these staff were familiar with this project and had been involved with various aspects of its implementation. On October 23, 2002, staff from both SWMLC and MNFI, as well as Carrie Tansy and Barb Hosler from the Fish and Wildlife Service, visited the Mitchell's satyr site in Branch County which is owned by three different landowners. One of the main objectives of the field visit was to further discuss the stewardship possibilities for this site as well as help SWMLC and USFWS staff become familiar with the site. On November 25, 2002 SWMLC staff met with Daria Hyde to discuss the framework for completion of site conservation plans for high priority satyr sites. SWMLC and MNFI conducted a work session on February 5<sup>th</sup> and made significant progress on three of the 4 plans. SWMLC and MNFI staff have since worked to complete the site conservation plans for the four high priority sites. On February 20<sup>th</sup> staff from SWMLC and MNFI attended the Mitchell' Satyr Working Group Meeting at the USFWS office in East Lansing. During the meeting 2002 activities were reviewed, stewardship and site conservation priorities were discussed and potential funding sources for research and management were identified. In addition there was a discussion on captive rearing satyr larvae for augmentation and/or introduction and implementation of recovery goals was reviewed.

### **Training**

SWMLC provided a one-day workshop on the identification and ecology of the Mitchell's Satyr Butterfly and associated rare species on June 28, 2002. Three SWMLC staff participated in the training as well as 9 volunteers, including two landowners and land managers from a private foundation that own property with potential satyr habitat in Cass County. The workshop provided an overview on the ecology and status of the Mitchell's Satyr Butterfly as well as protocol for conducting surveys for the Mitchell's satyr, massasauga and other rare fen species at sites.

### **Educational Needs**

It was determined that it would be most useful to produce a brochure on prairie fens targeted towards landowners which highlights rare species found in this community, especially the Mitchell's satyr and eastern massasauga, and which outlines stewardship activities needed to maintain this rare community. Although SWMLC originally planned to produce this brochure in the second year of the project it will be developed in the third and final project year. In addition it was decided at the Mitchell's Satyr Working Group Meeting on February 20, 2003 that it would be beneficial to conduct an educational meeting for landowners that have the satyr on their property. The goal of this meeting would be to provide them with information about the Mitchell's satyr status, ecology and management needs and answer any questions they may have. This meeting will be held in the fall of 2003 to inform landowners of the results of the monitoring conducted during the 2003 flight season.

### **Landowner Contact and Education**

In May of 2002, SWMLC contacted 28 landowners and received permission to survey 26 properties. These landowners included those in southwest Michigan with the Mitchell's satyr on their property as well as some landowners with prairie fen and potential for the satyr. Staff at SWMLC kept track of all contacts with targeted landowners using an organized filing system, and they will continue to update the land project tracking database with this information. Over the year SWMLC had positive discussions with many landowners. Three landowners at two sites participated in conducting surveys for the Mitchell's satyr and eastern massasauga and through their knowledge of their land showed SWMLC additional occupied habitat. These particular landowners are very interested in initiating management activities, such as shrub removal, to benefit the satyr.

### **Surveys /Fieldwork**

SWMLC organized and supervised 3 staff and 9 volunteers to conduct surveys for Mitchell's satyr, massasauga and associated rare species. A total of 59 visits were made to 26 properties (9 sites) during the flight season. All sites where permission was granted were visited at least twice, many three times. *De novo* sites were surveyed in Kalamazoo, Barry, Van Buren and Cass counties totaling 4 potential sites. No new satyr sites were discovered during 2002 surveys although the distribution of satyrs at known sites was expanded at three locations (Branch County, St. Joseph Co. West and Van Buren Co. Northeast) as newly occupied habitat was found. No massasauga rattlesnakes were observed during 2002 surveys, although information regarding massasauga sightings was collected from landowners. The box turtle (*Terrapene c. carolina* SC) was observed at 4 locations during surveys at 4 satyr sites in Barry, Berrien, Cass and Van Buren counties.

### **Local Stewardship Teams**

SWMLC initiated the formation of stewardship teams by keeping track and maintaining contact with interested volunteers and landowners. Nine volunteers participated in conducting surveys for the satyr and eastern massasauga and expressed an interest in assisting with stewardship of these sites and continued involvement with this project in future years. In addition, several landowners expressed an interest in assisting with the implementation of needed management on their property to maintain the ecological processes of the fen community. SWMLC will continue to maintain contact with these individuals and develop a strategic plan for implementing stewardship at select sites in FY 2002-2003.

### **Site Conservation Plans**

The site conservation plan for the Cass County Southwest satyr complex has been completed and the cover page of this document is attached in Appendix B. This satyr site was originally split into two sites at the time that the Mitchell's satyr site prioritization matrix was completed since it was thought that the railroad that divided the site posed a barrier to genetic exchange. During 2002 surveys a butterfly was seen flying up and over the ballast and tracks to the other side. Although this is likely a rare event and there is probably limited genetic exchange it was decided for planning purposes to treat this satyr complex as one site. Because this satyr site is made up of eight distinct occupied patches that are separated from each other by human induced as well as natural barriers it has been a challenging plan to write. Draft plans for the Van Buren Northeast and Branch County Site are nearly completed and will be submitted to the USFWS in April 2003. The remaining 7 plans will be completed by February 2004.

### **Stewardship Activities**

SWMLC has identified volunteers and SWMLC staff to implement stewardship activities at Mitchell's Satyr sites. SWMLC staff are planning to conduct five work days to remove brush at occupied sites. These work days will commence in 2003 pending permit approval. Additionally, SWMLC staff are assessing the feasibility of implementing other stewardship activities at select sites, both in occupied and unoccupied areas. These work activities may include brush removal or other invasive species control.

APPENDIX A  
Mitchell's Satyr Butterfly 2002 Survey Results

Site (Tract)	Mitchell's Satyr Butterfly 2002 Survey Results						No. of survey hrs.
	Date/Time Visit #1	Date/Time Visit #2	Date/Time Visit #3	# of surveyors	# of Satyrs	# of Satyrs/hr/ person*	
<b>Berrien County North</b>	7-1 / 1hr	7-5 / 1.5 hr		2	5	2.5	2.00
				2	60	20.0	3.00
		7-11 / 1.25 hr		2	46	18.5	2.60
<b>Berrien County South</b>	7-3 / 1.5 hr			2	3	1.0	3.00
		7-10 / 2 hr		2	6	1.5	4.00
<b>Branch County Site</b>							
<b>Tract A</b>	7-7 / 1.25 hr			1	49	39.0	1.25
		7-14 / 2 hr		2	11	3.0	2.00
<b>Tract B and C</b>	7-1 / 3 hr			2	61	10.0	6.00
		7-14 / 2 hr		2	9	2.5	4.00
<b>Cass County Northwest</b>	7-5 / 1 hr			2	0	0.0	2.00
<b>Cass County Southwest</b>							
<b>Tract A</b>	6/28/ .5 hr			2	0	0.0	1.00
		7-2 / .5 hr		2	0	0.0	1.00
<b>Tract B</b>	7-2 / .5 hr			2	1	1.0	1.00
		7-5 / 1 hr		2	0	0.0	2.00
			7/11/ 1 hr	2	0	0.0	2.00
<b>Tract C</b>	6-28/1hr			2	1	0.5	2.00
		7-5 / .5 hr		2	4	4.0	1.00
			7/11/.5 hr	2	0	0.0	1.00
<b>Tract E</b>	6-28 / .5 hr			2	13	13	1.00
		7-5 / .75 hr		3	34	15.0	2.25
			7-11 / 1 hr	3	19	6.5	3.00
<b>Tract F</b>	6-28 / .5 hr			3	1	0.5	1.50
		7-5 / .75 hr		2	8	5.5	1.50
			7-11 / .5 hr	4	1	0.5	2.00
<b>Tract G and H</b>	6-28 / .75 hr			2	6	4.0	1.50
		7-5 / .25 hr		3	12	16.0	0.75
			7-11 / .25 hr	3	13	17.5	0.75
<b>Kalamazoo County North</b>	7-3 / .5 hr			2	0	0.0	1.00
		7-8 / .25 hr		2	1	2.0	0.50
			7-12 / .75 hr	2	1	0.5	1.50
<b>Kalamazoo County West</b>	7-3 / 1.5 hr			2	2	0.5	3.00
		7-8 / 1.5 hr		2	4	1.5	3.00
			7-12 / 2 hr	2	3	1.0	4.00
<b>St. Joseph County West</b>							
<b>Tract A and B</b>	7-1 / 1 hr			2	2	1.0	2.00
		7-5/ 1.75 hr		2	23	6.5	3.50
			7-11 / 1.5 hr	2	21	7.0	3.00

<b>Tract C</b>	7-1 / .5 hr		2	0	0.0	1.00
		7-5 / .75 hr	2	0	0.0	1.50
<b>St. Joseph County East</b>	7-8 / 1 hr		1	8	8.0	1.00
		7-12 / 1 hr	1	4	4.0	1.00
<b>Van Buren County Northeast</b>	7-5 / 2 hr		2	18	4.5	4.00
		7-8 / 1.75 hr	1	13	7.5	1.75
		7-12 / 1.75 hr	2	9	2.5	3.50
<b>Total</b>				472		90.25

\* Rounded to half or whole numbers



APPENDIX B  
Cass County Southwest Site Conservation Plan

# Site Conservation Plan for Mitchell's Satyr Butterfly: Cook Lake/Rudy Road Complex Cass County, Michigan



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