

## THE CATALYST

### SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

**THIS MONTH'S MEETING:** Thursday 11/10 at 7 pm at Jennings Environmental Education Center, pizza and pop provided. 10/13/05 Meeting Attendance: J. Belgraden, C. Cooper, C. Denholm, M. Dunn, D. Johnson, V. Kefeli, S. Smith, W. Taylor

## SRWC Fabricated Soil and the CMU Solar House Connection

What do the Slippery Rock Watershed Coalition, Fabricated Soil, Carnegie Mellon University and the US Department of Energy's Solar Decathlon have in common? The answer is **Dr. Valentine Kefeli**. Valentine is a soil scientist who has been actively involved with the SRWC for a number of years and has always offered interesting insights from his vast life experiences. Valentine has been working on the development of a fabricated soil that he creates using a variety of "waste materials" such as wood chips, sawdust, leaves, pond fines, etc that are transformed into a soil that can support plant life. This fabricated soil has great potential to be used on disturbed landscapes, especially on old abandoned strip mines where the soil has either been buried or eroded away. This same fabricated soil is also an excellent potting material for indoor plants.

Valentine has been working with **Carnegie Mellon University** Architectural students and **Slippery Rock University** Master of Sustainable Systems students at CMU's **Robert L. Preger Intelligent Workplace**. The Intelligent Workplace (IW) is a living/working laboratory for the professors and architectural students and has been designed to be a flexible and adaptable modular work space that attempts to maximize the comfort and productivity of each individual while at the same time limiting the impact of the building to the environment through increased energy efficiency and carefully selected building materials. One of the goals of the center is to develop their Building As Power Plant (BAPP) concept in which, instead of being a vast consumer of energy, the building will actually be a net producer of energy. Valentine has been working with the students to use the fabricated soil in potted plants that add beauty and character and thus improve the mood and productivity of those in the building. The plants also contribute to the purification of the air and the production of fresh oxygen within the IW. Valentine will also be able to lend his expertise in passively treating and using gray and black water.



Students from CMU also recently designed and built a Solar House that competed in the **US Department of Energy's Solar Decathlon**, a national competition on the mall lawn in Washington DC. The team, which included students from Carnegie Mellon, **University of Pittsburgh**, and The **Art Institute of Pittsburgh** was led by student project manager **Jeremy Forsythe** and CMU professor **Stephen Lee**. The team placed 10<sup>th</sup> overall out of 18 teams from the United States, Canada, and Spain. According to Jeremy, this project, called "**Pittsburgh Synergy**" would not have been possible without the contributions of donated materials from local manufacturers and assistance provided by local unions, as well as other volunteers. The team of about 10-12 students built the solar house and then deconstructed it to move to Washington, DC and to rebuild in a matter of days. Valentine worked on this project together with the students, and the house contained many beautiful plants growing in fabricated soil. Following the competition, the house is to be rebuilt on CMU's campus where it will be used by the **Steinbrenner Institute for Environmental Education and Research**.

On September 22<sup>nd</sup>, SRWC participants **Margaret Dunn** and **Cliff Denholm** had the unique opportunity to tour both the solar house and the Intelligent Work place. Student Project Manager Jeremy Forsythe provided the tour of the solar house while **Professor Aziz** conducted the tour of the IW. Several of Professor Aziz's students participated in this year's SRWC Student Symposium that was held at Westminster College. Congratulations to Pittsburgh Synergy on a job well done! Thanks go to Jeremy and Dr. Aziz for the interesting tours and of course to Valentine for all of his efforts in education and research!!!

For more information about the Decathlon, the competing teams, and to see photos of the solar homes visit:

[http://www.eere.energy.gov/solar\\_decathlon/](http://www.eere.energy.gov/solar_decathlon/)





Ray Shearer, volunteer, conducting a survey for the endangered massasauga rattlesnake within the Jennings Prairie.

### Going...Going...Gone?

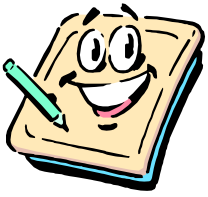
The Eastern Massasauga Rattlesnake is the smallest of Pennsylvania's three venomous snake species (the Northern Copperhead and Timber Rattlesnake being the other two), reaching an average adult size of between 18 to 24 inches in length. It also has the unfortunate distinction of being one of the rarest reptiles within the Commonwealth. Despite being under the protection of Pennsylvania's Endangered Species Act, of twenty one historical locations in Butler, Crawford, Mercer, Venango and Allegheny counties, only four sites remain in Butler and Venango Counties and one of those populations has become so low that it may already be too late to save. Like so many other animals, habitat destruction is mainly to blame for its precarious situation. Having a need for wetlands adjacent to more open, drier foraging areas has put serious limitations on remaining suitable habitat. Open areas are also important for gestating females, who give live birth to an average of three to nine young every other summer after becoming sexually mature at three years of age. Furthermore, unlike other rattlesnakes that seek shelter in relatively high, rocky crevices for the winter, Massasaugas are wet hibernators; that is to say they require low, wet areas to control their body temperatures and hibernate.

At the forefront in the cause to save the massasauga in Pennsylvania is **Jennings Environmental Education Center (JEEC)**, under the supervision of **Dave Johnson** and research conducted by the **Western Pennsylvania Conservancy**, whose efforts are headed by herpetologist **Ben Jellen**. For **PA DCNR** volunteers like **Ray Shearer**, what started out as merely checking predetermined routes for the presence of rattlesnakes has grown into a concerted effort along with the Conservancy to establish habitat requirements and movement patterns. This has been achieved by surgically implanting radio transmitters at the **Pittsburgh Zoo** in select Massasaugas and tracking them throughout their activity period, which lasts from about mid-April to mid-October. In addition, all snakes encountered coming out of hibernation are carefully captured and a PIT tag (Passive Integrated Transponder) is injected subcutaneously to aid in identification of individuals if they are encountered later in the year. Weight, sex, length and a blood sample for genetic studies are also taken at this time. To improve habitat quality for the rattlesnakes at Jennings, natural succession is curbed by mechanical cutting of saplings in winter, followed by a controlled burning of the relict prairie in early spring before the snakes emerge from hibernation. Without this effort from JEEC staff and volunteers, the forest could quickly reclaim the prairie and render it useless to the snakes.



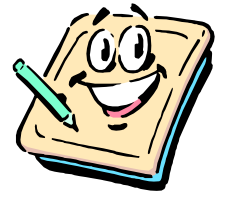
While park visitors to JEEC have mixed reactions to encountering rattlesnakes, more and more people come to the park in a quest for an opportunity to seek such a unique and rare wildlife viewing opportunity. More information on the Massasauga and snakes in general is available by contacting the center at 724-794-6011. The Massasauga is venomous and deserves our respect. There have been no recorded fatalities from its bite in Pennsylvania. If you should encounter a Massasauga, let it go about its business. Most bites occur from people trying to kill or capture the snake – both unnecessary and illegal actions.

~ Thanks to Ray Shearer for contributing this article!



# The KIDS Catalyst

SLIPPERY ROCK WATERSHED COALITION FUN ACTIVITY



## Thanksgiving Word Search

Try to find all of the words hidden in the puzzle below. They can be written horizontally, vertically, backwards, or diagonally! If you mail us your completed Word Search we'll send you a free gift certificate! Good luck, and have a happy Thanksgiving holiday!

Thanksgiving  
Turkey  
Autumn  
Pumpkin pie  
Harvest  
Family  
Football

Stuffing  
Corn  
Thanks  
Pilgrims  
Indians  
Colony  
Parade

Thursday  
Cider  
Feast  
Cold  
November  
Celebrate  
Nap

Name \_\_\_\_\_

Address \_\_\_\_\_

Age \_\_\_\_\_

C	G	N	O	L	B	V	E	D	A	R	A	P	A	N	O	P	E	W	R	C	K
E	O	T	L	A	Q	N	D	U	J	Y	U	Z	V	E	X	M	S	H	W	L	O
L	A	C	N	P	E	J	U	L	L	M	I	P	G	R	C	I	D	E	R	A	R
E	O	O	A	U	T	B	Z	E	P	I	N	T	E	W	G	P	L	M	J	X	E
B	A	N	C	E	G	J	K	K	Q	A	N	H	A	R	V	E	S	T	L	N	B
R	U	N	D	J	O	W	I	C	X	N	R	A	S	T	N	U	C	A	E	O	M
A	F	E	C	D	R	N	B	K	O	L	P	N	V	B	C	Q	U	E	X	A	E
T	I	L	N	S	P	M	E	V	J	Y	K	K	T	H	A	O	P	L	G	M	V
E	P	M	K	I	N	D	I	A	N	S	H	S	V	N	M	O	L	Z	C	B	O
Q	D	Y	E	V	N	U	V	E	R	D	K	G	N	O	V	M	C	O	E	L	N
C	L	C	B	R	S	K	N	A	H	T	C	I	C	L	L	A	N	M	N	A	E
T	O	U	S	K	T	H	A	C	V	P	I	V	L	M	F	E	N	A	V	Y	O
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P	A	C	B	E	M	T	Y	U	U	K	E	G	Y	C	P	O	A	R	M	P	K
U	X	Y	Q	Z	I	V	N	M	R	P	U	M	P	D	E	H	T	E	E	L	A
F	O	E	F	E	R	A	S	T	S	B	R	G	H	N	A	N	D	B	S	H	A
L	I	K	S	S	G	A	M	A	D	N	N	E	Q	N	M	V	E	M	A	R	C
T	H	R	S	D	L	P	K	L	A	T	O	S	Y	V	S	U	Q	Z	C	L	O
S	T	U	F	F	I	N	G	T	Y	J	P	E	M	S	Q	E	T	R	X	U	L
E	N	T	C	E	P	L	E	B	R	T	E	R	S	T	E	P	E	U	G	U	N
S	T	W	M	D	S	O	O	F	E	A	S	T	L	L	Y	L	I	M	A	F	E



Slippery Rock Watershed Coalition c/o Stream Restoration Incorporated  
A PA Non-Profit Organization  
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## Calling All Creative Kids!!!

We love receiving drawings, colorings, stories, and other original creations from the young readers of the Catalyst!!! Below are some great drawings by one such young reader, **Savannah Cofer**, age 7. She sent us a fun story about a snail named Mo and his adventures trying to reach his friend's house, Bo the slug. Thank you, Savannah, for sharing your talent with us! We enjoyed your story a lot! We encourage all of you kids out there to send us drawings about things you have seen in nature, like to do outdoors, are learning in school about the environment, etc.!!! You can mail us pictures or write us a short letter telling us how you try to help keep your neighborhood clean, or help make a habitat for animals that live near you. Maybe you have a funny story to share about the outdoors, or would like to make up a story with animal characters like Savannah did! These are just a few ideas—you can be as creative as you want to! Maybe you can paint a picture or write a poem! Who knows? Maybe *YOUR* drawings will be in the Catalyst some day, seen by over 1,200 people! You can mail your original creations to: **SRWC Creative Kids, c/o Stream Restoration Incorporated, 3016 Unionville Road, Cranberry Township, PA, 16066.**

