



DrummondV

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- - Conservation through Stewardship - -

Letter from the Editor

- The NASC is born

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Drummondii is the quarterly newsletter of the North American Sarracenia Conservancy. For more information, visit our website: <http://nasarracenia.org>

It has been just over three years since a unique idea for conserving genetic variation of North American pitcher plants was first brought to light. This idea was unique in that it gave carnivorous plant growers, both young and old alike, an opportunity to make a real difference in saving this quickly vanishing group of plants. As we found out over the next few years, setting up an organization is a lot of work. Enthusiasm doesn't always translate into commitment or know-how, and none of us had ever drafted a set of bylaws or applied for non-profit status. However, enough people were committed to the project to make it happen, and here we are three years later with a board of directors, committees, bylaws, and the beginnings of some real conservation work. In short, we have finally become the North American Sarracenia Conservancy.

In this issue I want to introduce you to some of our committees and directors. Want to get involved? This is your chance to get a feel for what different parts of the organization do, and where your skills and resources could best be put to use. Also check out the articles about the subject of our efforts – *Sarracenia*! On the last page you will find information on how to join the NASC.

Noah Elhardt
Director of PR and Education

So What's All This Fuss About *Sarracenia rosea*?

Noah Elhardt

It is easy to imagine species as distinct lineages of organisms, each with an unchanging name bestowed upon it by some botanist of old, accompanying Columbus on his voyages of discovery. Taxonomy, however, is not nearly so infallible a science. True, six of the currently recognized *Sarracenia* species have existed since before 1863. But consider *S. oreophila*, for instance. This species was more recently described and quickly accepted. So quickly, in fact, that most new carnivorous plant growers are not aware that *S. oreophila* has only been recognized as a distinct species since 1993!



S. rosea from Okaloosa Co., FL

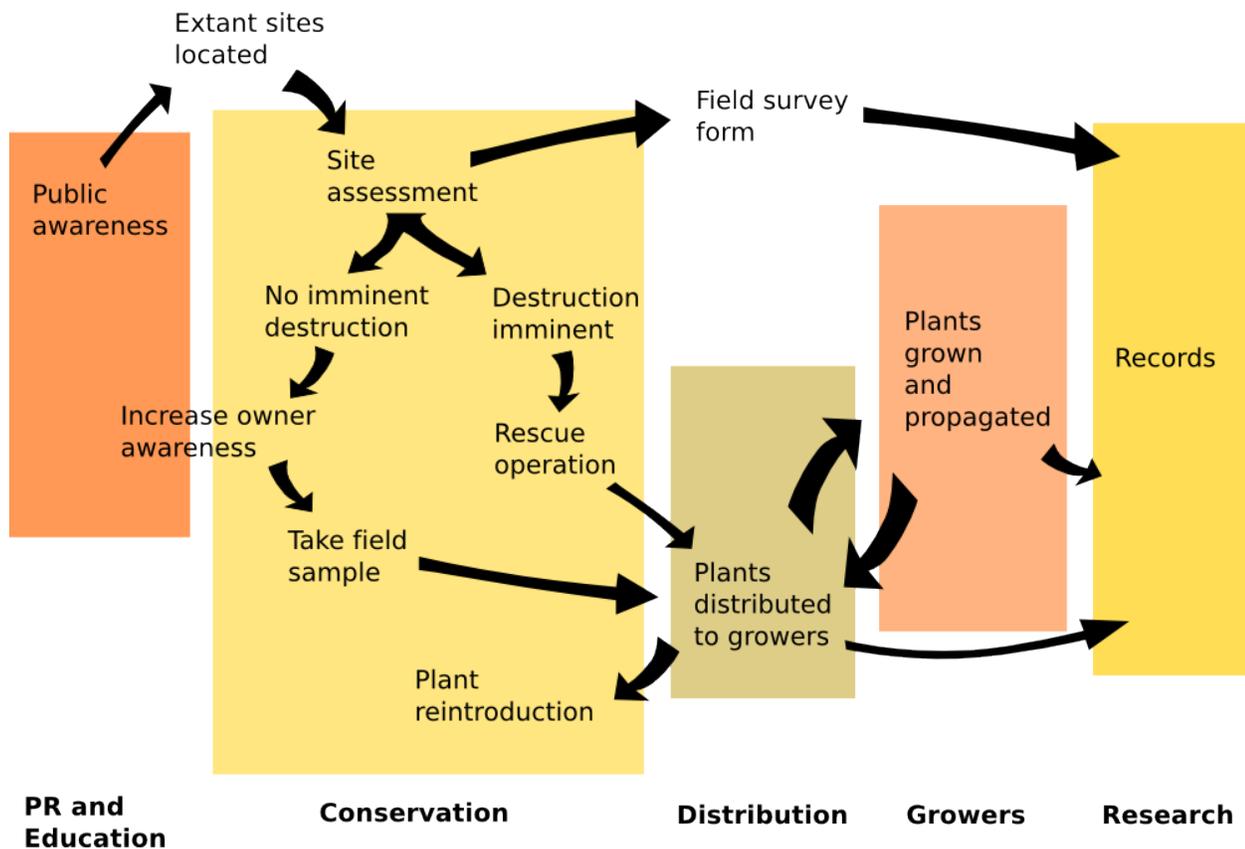
Sarracenia purpurea has long been considered to have two subspecies: *S. purpurea* ssp. *purpurea* in the north andcontinued on page 4

The NASC – An Overview

Sarracenia are threatened in the wild by many factors, especially development and the drainage of their habitat. 1993 estimates indicate that 97.5% of *Sarracenia* habitat have already been destroyed in the southeastern U.S.,⁽¹⁾ the home of all but one subspecies of *Sarracenia*. Currently the biggest threats to surviving populations are urban development, drainage of habitat for forestry, runoff of herbicides from agriculture, fire suppression, cut pitcher trade for floristry, and plant trade.⁽²⁾ There is no protection for plants on public land in many states, and nowhere for plants on private land. Concerned at the alarming rate at which these plants are disappearing from the wild, we formed the NASC to safeguard the future of these plants by working for their preservation, while also maintaining their genetic diversity in cultivation.

The mission of the National Sarracenia Collection is to serve as a living record of the taxonomic, morphological and genetic diversity of the genus Sarracenia for purposes of conservation and cultivation.

We aim to do this by surveying remaining *Sarracenia* populations and, when possible, collecting samples to be grown and propagated in cultivation. This will preserve the genetics of wild stands regardless of their possible future demise. For this purpose, we chose five committees to oversee the work of setting up and maintaining this living genetic record, as well as pursuing our secondary goals of public awareness, research, and increased cultivation. The following is a simplified flow chart showing the core work of the NASC:



Each committee is overseen by a committee head who, along with the president, vice president, secretary, and treasurer make up the NASC board and ensure things run smoothly. To join one of these committees or contact a board member, see the last page of this newsletter.

(1) Groves, M., ed. 1993. *Horticulture, Trade and Conservation of the Genus Sarracenia in the Southeastern States of America: Proceedings of a Meeting Held at the Atlanta Botanical Garden, September 22-23, 1993*, 17pp.

(2) Robbins, C. S. 1998. *Examination of the U.S. Pitcher-plant Trade With a Focus on the White-topped Pitcher-plant*. *Traffic Bulletin. Excerpts*, Vol. 17, No. 2 (June 1998)



Mark Todd
Conservation Committee

I never chose to work in conservation. I guess you can say that it chose me. I grew up near the Green Swamp in North Carolina.

The Green Swamp is famous for having the most carnivorous plant species and individuals at one site. Nearly 20 different species of carnivorous plants grow there.

After I moved away from home, I came home to visit for Christmas in 2002. Seeing numerous signs that said "No Green Swamp Dump", I asked some local people about the signs to find out what they were about. I learned that there was a proposed landfill to be built in the swamp. Knowing from experience that the area is subject to massive rainfall at times, I knew that it would be a ticking time bomb for the area. I found out that there was a local petition to stop the landfill. I made sure that carnivorous plant growers around the world knew about the petition. I showed that there were people all over the world who care what happens to this one swamp.

When the NASC was founded, I was chosen to head up the conservation committee.

The following are the goals and priorities that the conservation committee plans to achieve:

- * Our number one priority is to keep as many plants in their natural sites as possible. We will work with landowners in whatever way we can to achieve that goal. Whenever possible, small seed and plant collections are conducted in case a site is lost due to development, poaching or other factors in the future. We also monitor the sites for anything that will prevent the plants from continuing to grow on the property. In such a case, we try to conduct plant rescue operations.
- * Our number two goal is removing plants from any imminent danger that threatens their survival in their habitat. With the consent of the landowner we remove the plants that are in danger and distribute those plants to our growers. If, in the future, the danger to the plants no longer exists, we can repopulate that site with the descendants of the plants removed from the same site.

We always work with landowners to achieve our goals. We never use threats or intimidation and we never intentionally mislead landowners. We only make collections after all the paperwork is in order and only when it is legal to do so. Only members who are authorized by the board may conduct a collection. *To see the NASC Conservation policies and procedures in further detail, visit <http://nasarracenia.org/ConservationPandP.html>*

If you have any questions about conservation, or would like to help in our conservation efforts, contact Mark Todd at conservation@nasarracenia.org.



Jonathan Treffkorn
Secretary

Since the early days of the NASC, I have been interested in playing a part in the organization. Unfortunately, my age prevented me from becoming a board

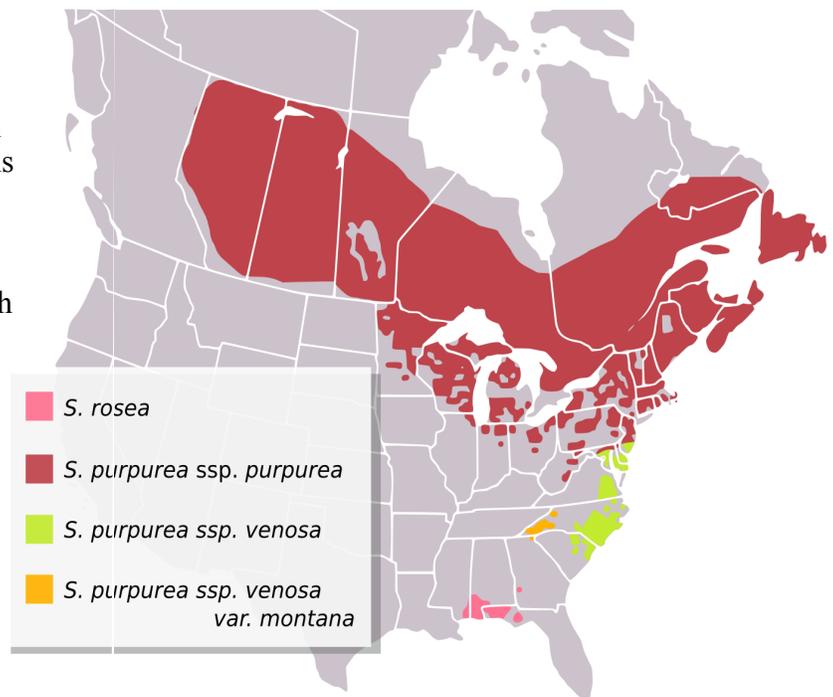
member when positions were originally filled. However, shortly after I turned 18 in late 2006, the position of Secretary opened up when work obligations caused the existing secretary to resign. I jumped at the opportunity, hoping that I would get my chance to help out. Since October of 2006 I have been Secretary to the NASC, keeping logs of the meetings, writing minutes, preparing to be keeper of official documents, and generally assisting the rest of the board members.

As this is my first position on the board of a nonprofit organization, there has been a lot to learn; however, I am enjoying working as part of a positive force in the carnivorous plant world. In my coming term I hope to continue to expand the secretarial services and literary resources I provide to the NASC board and members. I look forward to interacting with members and with other friends of the NASC, building relationships while strengthening the organization. If you think that you may be interested in joining the NASC, join us for our online meetings to find out what we're all about - I'll be sure to include you in the minutes!

To contact Jonathan Treffkorn, email him at secretary@nasarracenia.org

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S. purpurea ssp. *venosa* in the south, with the dividing line somewhere around New Jersey. In 1993, Donald Schnell recognized the populations along the Gulf Coast as being a separate variety, naming it *S. purpurea* ssp. *venosa* var. *burkii*. Together with Determan published a further variety from the mountains of Georgia and North Carolina as *S. purpurea* ssp. *venosa* var. *montana* in 1997 (See map at right). Few people batted an eye at this until Naczi (1999) elevated *S. purpurea* ssp. *venosa* var. *burkii* to species level as *S. rosea*.



“What? A separate species?? Pure drive!” exclaimed hobbyists around the world.

Now, seven years later, the name has still not widely caught on. Will it fade away, its legitimacy undermined by its lack of acceptance? A closer look at plant morphology and recent scientific findings gives us reasons to change those plant labels on our *S. purpurea* ssp. *venosa* var. *burkii*.

First, let's look at some basic morphological differences:⁽¹⁾

Trait:	<i>S. purpurea</i>	<i>S. rosea</i>
Flower and stem size	small flower, tall scape	large flower, short scape
Petal color	maroon	pink
Pitcher size	generally smaller	generally larger
Lip/peristome	narrow	wide and pronounced

Keep in mind that though these differences may seem minor at first glance, many of the upright species, such as *S. alata* and *S. rubra*, are far less distinguishable morphologically.

Still not convinced? A 2006 phylogenetic study that analyzed DNA extracted from 22 *Sarracenia* representatives, including all four *S. purpurea* taxa, found that there was a strong genetic difference between *S. purpurea* ssp. *venosa* var. *burkii* and all other *S. purpurea* taxa. To quote the study⁽²⁾:

“The strongly supported dichotomy between S. purpurea ssp. venosa var. burkii and the other infraspecific S. purpurea supports Naczi et al.'s (1999) elevation of this taxon to specific status as Sarracenia rosea.”

Not only are there significant morphological and geographical differences, but the genetic break between the taxa strongly supports the recognition of *S. rosea*. On December 14, 2006, the NASC voted to adopt this taxonomic change. We hope you will, too.

(1) Stevens, Tim (2002) An Interview with Dr. Rob Naczi about *Sarracenia rosea*. *Carniv. Pl. Newslett.* 31(3):87-92

(2) Neyland, Ray; Merchant, Mark (2006) Systematic Relationships of *Sarraceniaceae* Inferred From Nuclear Ribosomal DNA Sequences. *Madroño.* 53(3):223-232

Distribution map based on data from:

USDA Natural Resources Conservation Service <http://plants.usda.gov>

UNC herbarium maps http://www.herbarium.unc.edu/Carnivores/Sarracenia_purpurea.htm

SCHNELL, D. E. *Carnivorous Plants of the United States and Canada. Second Edition, Portland, Oregon, U.S.A., Timber Press, 2002. ISBN 0-88192-540-3.*

Pollinating *Sarracenia* Flowers – A Grower's Guide

Noah Elhardt

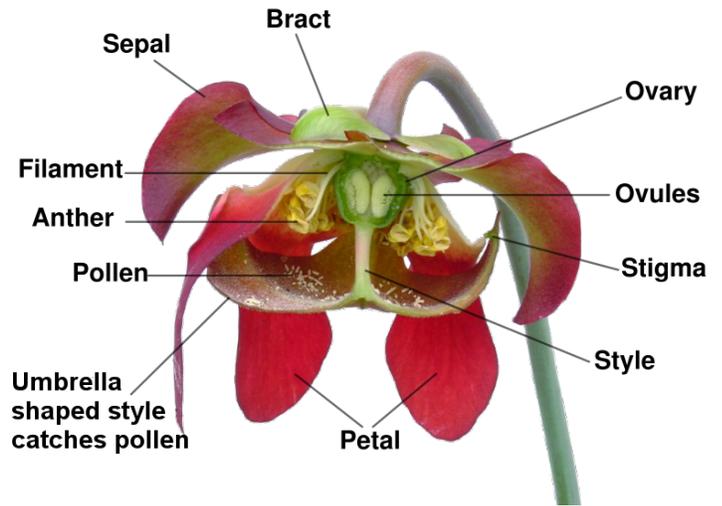
Any serious attempt at conserving genetic lineages through cultivation, as we are attempting to do, requires careful attention to flower pollination each spring. *Sarracenia* flowers have an elaborate design which prevents self-pollination. If we allow bees to do the pollinating for us, they would invariably cross pollinate flowers from different locations, rendering the resulting seed useless for our purposes. Thus, flower segregation and hand-pollination are vital.

First, a word about floral anatomy. Most flowers have male parts (called anthers) which disperse pollen. The pollen is transferred to the female receptors called stigmas. The pollen then grows "roots" through the style to the ovary, where immature seeds called ovules lie in wait. Once fertilized, the ovary swells into a fruit containing the seeds.

In *Sarracenia*, the flower is held upside down and the style is greatly enlarged into an upside down umbrella shape. This umbrella catches the pollen produced by the anthers. Normally, bees visiting the flower pick up this pollen and, upon entering the next flower, brush the pollen against one of the stigmas located at the five tips of the style. For our purposes, we will be replicating this process, transferring pollen from one clone of a particular location to stigmas of flowers of other clones of that same location. That way, the resulting seed will be genetically pure and can retain the same location data.

When your flower buds are close to opening, cover them with a bag of gauze or mesh tied loosely around the stem. This will prevent pollination by insects.

The flower below is cut open to show all the different parts. You can access the inside of the flower by removing a petal.



When the pollen is ripe (3-5 days after opening), remove the flower covers of one group of plants (for example all of the *S. alata* plants from a particular location). Pollen grains will have started accumulating in the umbrella of each flower. Using a clean toothpick, carefully transfer these from one flower to the stigmas of other flowers in your group. Once you've pollinated all the stigmas using pollen from various flowers in the group, throw away the toothpick, re-cover all of your flowers, and move on to another group.

The ovaries should swell, harden and crack open in a few months. Each ovary produces hundreds of seeds, so there'll be plenty to share. Remember to keep good records of everything for the NASC database.



Suzanne Hedderly
Vice President

I have been involved with NASC since its inception, when I was approached by *Sarracenia* grower Steve Millar with his idea of organizing a group of concerned

horticulturists in order to change the dire plight of the North American pitcher plants. The idea of the NASC was planted and slowly the framework of the organization was built. It hasn't been easy and there

have been a lot of bumps along the road. Achieving this worthy goal is a long-term commitment of hard work and dedication by caring and motivated individuals. There is much work to be done but with the support of the carnivorous plant community and the partnership of other conservation-minded groups and individuals, this goal is achievable!

As Vice-President, my goal is to assist the President and other Board of Directors officers in moving the organization forward, as well as to promote the goals of NASC, land/plant conservation in general,

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 and conservation specific to *Sarracenia*. Education will be a strong focus for NASC in the future in order to raise awareness of what this planet stands to lose if we don't take action NOW

I reside in Richmond, Virginia and have been involved growing a variety of carnivorous plants for approximately 7 years. I invite everyone to join with NASC to help achieve this very important goal of keeping *Sarracenia* on this planet in healthy numbers, so future generations can have the pleasure of being able to see these magnificent plants. Let's join hands and get to work!



Left: A *S. flava x purpurea* hybrid pitcher from a lakeside site in North Carolina. The NASC is working with the land owners to try to save the population from a planned boat ramp and lawn.

5 ways YOU can join the NASC in its efforts:

- Become a member! There is a \$10/year fee. You can download a membership form here: <http://nasarracenia.org/forms/membership2006-05.pdf>
- Live near *Sarracenia* habitat? Help us find remaining populations. You can download a field survey form from the website. Members can also join the Conservation Committee and help with rescue and sampling operations.
- Join the PR Committee and help raise public awareness of *Sarracenia* and their plight.
- Do you have the resources and know-how to grow out *Sarracenia* seedlings? Join the Growers Committee and help preserve genetic diversity through cultivation.
- Participate in the annual carnivorous plant fundraiser auction held each summer. Information will be posted on the website.

2007 Meeting Dates

Official NASC meetings are held monthly on the second Thursday of each month, at 8 P.M. CST. Unofficial meetings are held every Thursday night at the same hour. To attend a meeting, download the AIM chat program from www.aim.com and then email your screen name to Suzanne Hedderly. Log on to AIM at the correct time and you will be invited to the NASC chat room.

- April 12, 2007
- May 10, 2007
- June 14, 2007
- July 12, 2007
- August 9, 2007
- September 13, 2007
- October 11, 2007
- November 8, 2007
- December 13, 2007

NASC Board Contact Information

President	Rose Witt	president@nasarracenia.org
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Head Grower	Mike Howlett	headgrower@nasarracenia.org
Head of Conservation	Mark Todd	conservation@nasarracenia.org
Head of Distribution	Jeremiah Harris	distribution@nasarracenia.org
Head of PR and Education	Noah Elhardt	publicrelations@nasarracenia.org
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