



the Seedhead News

Black-eyed peas, also known as cowpea, crowder peas, (southern) field peas, niebe, and frijole belong to the genus *Vigna*. A member of the large legume family (Fabaceae), they are related to common bean (*Phaseolus vulgaris*) and were once considered part of that genus. It is now more commonly agreed that cowpea belongs to *Vigna unguiculata*, which includes several subspecies: cowpea (*V. unguiculata* subsp. *unguiculata*), catjang (*V. unguiculata* subsp. *catjang*) and yardlong bean (*V. unguiculata* subsp. *sesquipedalis*). With close to 200 species, the genus *Vigna* contains a number of varieties of economic importance in many developing countries, including mung beans (*V. radiata*), urd beans (*V. mungo*), adzuki beans (*V. angularis*), bambara groundnuts (*V. subterranea*), mat beans (*V. aconitifolia*), and rice beans (*V. umbellata*). Many of these species are also valued as forage, cover, and green manure crops.

Cowpea is an Old World domesticate, originating in Africa, where wild cowpea species can still be found. With the understanding that areas of high genetic diversity for a crop likely represented where that crop was originally domesticated, cowpea was once believed to have originated in Asia — an area of high cowpea diversity. Other scenarios suggest its origin and domestication are likely associated with the cultivation of cereals — sorghum and pearl millet — some 5000-6000 years ago in the savannahs of Africa.

Cowpeas

by Suzanne Nelson,
Director of Conservation



Other *Vigna* species, such as mung, urd, adzuki, mat, and rice beans may indeed have originated in Asia.

Though ideas about its exact origins are varied, it is widely considered to be an ancient crop as evidenced by its presence in very old languages, including Sanskrit. In India, it is known by as many as 50 different names, including chowlee (chawli) and lubia (lobiya). From Africa, cowpea was introduced into the Americas via the West Indies by slave traders. Arriving in Jamaica in 1675, cowpea was brought as food for slaves. Highly adaptable and easy to grow, particularly in the tropics, cowpea cultivation spread quickly and is believed to have reached Florida about 1700. Cowpeas were known as 'pease' to distinguish them from the English pea (*Pisum sativum*), which is not as suited to the humid, hot climate of the South. During the Civil War, northern troops ravaged the countryside destroying all food

and livestock they couldn't cart away. At that time, northerners considered "field peas" and corn to be fit only for animal feed and tended to ignore fields of cowpea and

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ABOVE **Cowpea grown at the Conservation Farm this summer.**



ABOVE **Ejotero cowpeas from the Rio Fuerte in Sinaloa, Mexico.**

If you have grown some of our cowpea collections over the past 10 years or so, you may have noticed that your harvest was considerably more diverse than what you planted. This may be the direct result of crossing that occurred during an early regeneration of our cowpea, before staff realized how significant crossing could be for cowpea! Since then, we have been working to 'reselect' back to what the original collections looked like. Unfortunately, it may not be possible for some accessions, depending on the degree of 'bottlenecking' that occurred when the seed were selected for saving. One of our collections once produced 5 distinct color types but this year only one type was present in the growout! Only time will tell if we can retrieve the other types (luckily, that single accession was likely a 'mix' of the 5 distinct types and thus are each represented in other collections from the same region. Thus, they haven't been 'lost' except as that particular mix).

Cowpeas continued

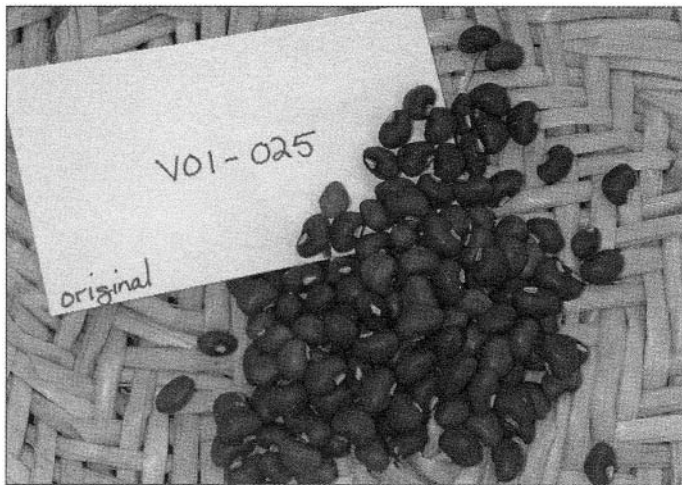
corn (which were typically 'intercropped' as strips of cowpea planted between several rows of corn). Thus, cowpea became a survival food during and after the war.

Cowpea is a warm season crop, considered to be drought and heat tolerant. It can be grown successfully in a wide range of soils and environments, though it does not like waterlogged or heavy clay soils. Every part of the plant can be used. The tender shoots and leaves can be eaten and are an excellent source of high quality protein — as much as 25% protein. Immature seeds and pods are also eaten and are often the earliest foods available at the end of the "hungry time." Mature dry seeds are cooked and eaten or ground into flour. Cowpea is rich in protein and digestible carbohydrate. Combined with the amino acids from cereals such as millet and sorghum, lysine-rich cowpea provides a balanced complement of amino acids, similar maize system in the Americas. Cowpea plant residues are used extensively as feed and fodder for animals as well as for cover crop and green manure.

Like other legumes, cowpea fixes atmospheric nitrogen and thus contributes to the available nitrogen levels in the soil. Cowpea is often intercropped with sorghum, millet or maize, where increased growth and yield of the cereal component may result from the transfer of nitrogen fixed by the cowpea. In farming systems where cowpea and cereal are rotated in the same field, residual nitrogen from the cowpea often benefits the cereal in the subsequent season.

Because of its ability to thrive in dry environments, cowpea is the crop of choice for the Sahelian and sub-Saharan zones in Africa. The deep root systems help stabilize the soil, and the ground cover it provides preserves moisture; traits of particular importance in hot arid regions. Worldwide production of cowpeas is approximately 20 million acres, with most of this coming from Africa where cowpea is produced on millions of small farms and plots in Nigeria and Niger, but also from Senegal eastward to Sudan and Somalia and southward to Zimbabwe, Botswana and Mozambique. Additionally, Brazil, Haiti, India, Myanmar, Sri Lanka, Australia, the U.S., Bosnia and Herzegovina produce significant amounts of cowpea. In the US, cowpea production is dominated by California, but is very popular in home gardens particularly in the south.

As a broadly adapted and highly variable crop upon which millions of families depend for subsistence, cowpea has been much researched and many improved cultivars developed. Cowpea is one of the mandated crops addressed by the International Institute of Tropical Agriculture, Ibadan, Nigeria, where the world's cowpea germplasm is maintained. Here, researchers and plant breeders have developed new cultivars to address specific and abiotic stresses.



ABOVE **Texas cowpea, a variety from Eagle Pass, Texas.**

The NS/S cowpea collection contains 31 accessions, most of which were grown at the Conservation Farm this past summer (our single wild cowpea accession was grown last year and is currently offered in the Seedlisting). As cowpea is a heat-loving crop, it's not surprising that most of our collections are from the hottest parts of the Greater Southwest, 17 are from the hot coastal plains of southern Sonora — Mayo and Guarijio country; 2 are from southern Texas, 3 from the Tohono O'odham Nation, and 2 from southeastern Arizona (though they originated elsewhere). Perhaps more surprising are the 2 collections from the Mountain Pima in the western slopes of the Sierra Madre in Sonora and 4 from the Tarahumara, though these are all from lower (and hot!) elevations in the Barranca del Cobre — perhaps not so surprising after all.

Like most legumes, cowpeas are predominantly self-pollinating. However, the large, showy flowers and abundant nectar attract many insects and significant crossing can occur (see side box on left). To prevent this, each cowpea accession was grown in an isolation cage, protecting it from pollen transfer by roaming insects. Cowpeas produce their showy flowers and pods on long peduncles that stick up above the plant canopy of leaves. It is an excellent summer crop, providing abundant greenery, beautiful showy flowers, attractive pods, tasty eating all season, great soil cover during the heat of summer and significant organic matter after being turned into the ground. It is one of my favorites!

As a result of our regeneration efforts this past summer, our selection of cowpeas in the 2007 *Seedlisting* will be as complete as possible — every unique variety will be available in the catalog! And the diversity is stunning — typical cream-colored seeds with black eyes; beige, tan, buff and sandstone-colored seeds with barely visible eyes; solid black and solid brick-colored seeds; cream and tan/red/brick pinto-patterned seeds; grey mottled-colored seeds; black and white pinto-patterned seeds; round, diminutive seeds; large, globular seeds; somewhat 'flattened' kidney-shaped seeds. A veritable smorgasbord!

Though highly diverse in shape, size, and color, cowpea are often grouped according to the following categories:

- ❖ Black-eyed or pink-eyed/purple hull peas — the seeds are white with a black eye. Other eye colors commonly include pink, purple or shades of red. When dry, the eye color darkens to a dark purple. The pods are purple-ish on the pink-eyed/purple hull type. The seeds are not tightly packed or crowded in the pod and are kidney or oblong in shape.
- ❖ Brown-eyed peas — pods range in color from green to lavender. When cooked, immature seeds are a medium to dark brown, very tender and have a delicate flavor.
- ❖ Crowder peas — seeds are black, speckled, and brown or brown-eyed. The seeds are "crowded" in the pod and tend to be globular in shape.
- ❖ Cream — seeds are cream colored and not crowded in the pods. This is an intermediate between black-eyed and crowder types.
- ❖ White acre type — seeds are kidney shaped with a blunt end, semi-crowded and generally tan in color. Pods are stiff with small seeds.
- ❖ Clay types — these older varieties are medium to dark brown in color and kidney shaped, but are rarely grown.
- ❖ Forage cultivars — adapted for use as fodder, or cover crop use.

In the south, a New Year's tradition of eating black-eyed peas is believed to bring good luck in the New Year. My in-laws, both from Louisiana, always prepare this customary dish, including ham, hush puppies and cole slaw for dinner on New Year's Day. It is a custom I very much enjoy and which my family here in Tucson has adopted. Below is basic recipe that can be embellished to your own taste — bon appetit!

Black-eyed Peas

- 1 bag frozen black-eyed peas
- 2 qts water
- 1 onion, chopped
- 3 cloves garlic, minced
- Ham bone, salt pork or several slices of bacon, optional
- Salt and pepper to taste

Cook the black-eyed peas according to instructions on the package. While cooking, saute garlic and onion until translucent. Add to cooking peas. Add ham, pork or bacon to cooking peas. Cook on medium boil until tender, about 30 minutes. Add salt and pepper to taste.



ABOVE **Students tending their new garden plots.**

RIGHT **Guatemalan Purple fava, Tohono O'odham June corn and Salt River Pima peas from NS/S growing at Phoenix Community College.**



Phoenix College Students Plant with the Monsoons

by Mickie Bond

As part of a semester long project, students in BIO 108 — Plants and Society at Phoenix Community College used seeds from NS/S to plant several flower beds at the 11th Ave. & Thomas Rd. campus. The 98 students worked in groups of four and kept weekly growth records. Planting occurred just two days before a long overdue monsoon rain arrived! Even those who admitted they had never planted anything more than a kiss were delighted when plants began showing up so quickly.



Book Review: *In the Sierra Madre* by Jeff Biggers

University of Illinois Press, Champaign. 2006. 208 pages, hardback. \$25.95.

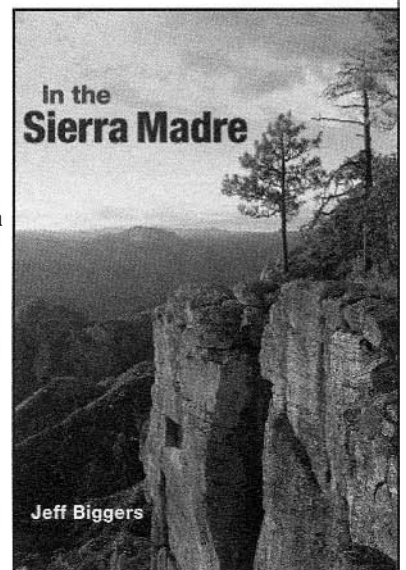
More than once, we — like so many others — have used the phrase “Treasures of the Sierra Madre” to introduce our projects with the Tarahumara. The story of gold and greed is often what most people first know about these remote Mexican mountains, which is also home of Copper Canyon, a spectacular landscape larger than Arizona’s Grand Canyon. If you don’t know the book by the enigmatic B. Traven, you probably have seen the great movie made by John Houston and starring Humphrey Bogart. Remember the *banditos* posing as *federales* telling Bogie, “Badges? BADGES? We don’t have to show you no stinking badges!” Most recently, we’ve titled at least one grant proposal and an article in this newsletter, “Living Treasures of the Sierra Madre,” referring to the people, the crop diversity, and the environmental diversity of this special region.

Jeff Biggers’ new book is the latest Sierra Madre treasure.

In the Sierra comfortably interweaves the experiences of Jeff’s year in a remote Tarahumara village with his research and ruminations on both the Tarahumara and the various adventurers who have visited their homelands. From African

explorers, Bohemian friars, Confederate and Irish war deserters, French poets, Boer and Russian commandos, Apache and Mennonite communities, bewildered archaeologists, addled writers, and legendary characters including Antonin Artaud, B. Traven, Sergei Eisenstein, George Patton, Geronimo and Pancho Villa, and our own Mahina Drees and Barney Burns, Biggers uncovers a great number of remarkable people.

One reviewer praises Biggers’ ability “to write like a poet, a historian, a naturalist, and an adventurer.” He has an ear for a good story, and a fine way of bringing many stories (including his own) together to illuminate this remarkable place and people.





Investing in the Future, Banking on the Past:

Capital Campaign for a New Seed Bank Announced

In October, at the 10th Annual Harvest Dinner, Native Seeds/SEARCH announced plans for a \$500,000+ capital campaign to build a new seed bank in Tucson.

An extensive planning process outlined both the need and a plan to raise the resources needed to obtain a new facility. The current seed bank, located at 2130 N. Alvernon, is too small for our nearly 2,000 seed collections, lacks sufficient space for staff and volunteers to work, and provides insufficient security for these valuable and irreplaceable seeds.

At the date of announcement, we had secured financial commitments of nearly \$280,000, more than half of our minimum fundraising goal of \$500,000. Gifts secured include \$100,000 from an anonymous donor and \$50,000 from the Tohono O'odham Nation, as well as gifts totaling nearly \$60,000 from Native Seeds' volunteer Board of Directors and a collective \$10,000 from our own employees. The participation of 100% of board and staff demonstrates significant commitment and leadership from the organization towards the goal of building the new seed bank.

Janos Wilder, a co-chair of the campaign, said, "We are excited about the opportunities that our new seed bank will provide us to share the seeds of ancient crops with native people, farmers and gardeners all over the world, and anyone who loves the delicious joy of heirloom foods."

The new seed bank facility will enable the organization to:

- ❖ Increase space to store current and future seed collections
- ❖ Ensure the safety and long term maintenance of the seed collections
- ❖ Further NS/S's goal to encourage the distribution and use of these seeds in fields and gardens
- ❖ Provide increased support to groups involved in traditional farming
- ❖ Maximize NS/S's volunteer resources
- ❖ Increase sales, organizational visibility, membership and ultimately Native Seeds' capacity for financial stability and sustainability

Our search for a location for the new seed bank is now centered on plans to collaborate with Pima County at one of their new county parks that will feature an agricultural education complex.

For more information about Native Seeds/SEARCH's future and the campaign for the new seed bank, please contact Kevin Dahl at 520.622.5561 or kdahl@nativeseeds.org.

Your Generosity Keeps Us Growing

MANY THANKS TO ALL OUR MEMBERS & FRIENDS FOR SOWING & GROWING THE SEEDS OF SUPPORT

ALL DONATIONS AND MEMBERSHIP CONTRIBUTIONS LISTED WERE RECEIVED BETWEEN OCTOBER 1, 2005 AND SEPTEMBER 30, 2006. AGAIN, THOUSANDS OF SUPPORTERS MADE GIFTS UNDER \$100. WE WISH WE HAD THE SPACE TO ACKNOWLEDGE EACH AND EVERY ONE OF YOU AND DEEPLY APPRECIATE YOUR CONTRIBUTIONS.

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10th Anniversary Harvest Dinner



This year marked the 10th anniversary of this spectacular annual benefit dinner. Nearly 85 guests attended the festivities held on October 10 at Janos Restaurant on the grounds of the Westin La Paloma Resort in Tucson. Janos Wilder, James Beard Award-winning chef and owner of Janos Restaurant, J BAR and consulting chef to Kai Restaurant in Phoenix, joined with Sheraton Wild Horse Pass Resort's Executive Chef Michael O'Dowd, Chef de Cuisine Jack Strong, and Sous Chef's Sam Baxter and Cynthia Gonzales, along with their respective teams, for an evening of unforgettable culinary delights.

The evening began with bocaditos on the terrace where appetizers included dishes such as mesquite flour blini, spicy tepary bean puree and agave nectar glazed duck served with sangria cocktails. This was followed by an exciting, bold and unique five-course dinner with wine pairings created especially for this event. See next page for recipes!



A Note from Janos:

When I reflect on ten years of Native Seeds/SEARCH Harvest dinners I wonder why we weren't doing them from the very beginning. It's always such a wonderful event and this year was particularly gratifying for us as we were joined by the culinary team from Kai Restaurant at Wild Horse Pass where I am the consulting chef. The Kai team brought a new perspective and vision to working with the products from the region. Also, for the first time this year, we worked with Christmas Lima Beans which we used in a preparation of feijoada, a Brazilian dish with linguica, shortribs, onions and tomatoes cooked in with the beans. We served it under buffalo with a sauce made with corn and dried chiles I brought back from Oaxaca last fall. After the meal, many of us in the kitchen decided that was one of our favorites.

Most exciting for us this year was the announcement of the Capital Campaign to raise funds to build a new Seed Bank. I'm honored to have been asked to co-chair the Capital Campaign Committee and we've already raised \$280,000 towards our goal. Building a new Seed Bank is critical to our preservation mission and also signals the vitality of this organization which is working on numerous initiatives to further our organizational goals.

HARVEST DINNER RECIPES

Huitlacoche, Queso Fresco, Corn, Dried Tomato and Chipotle Morita Relleno Served with Guacamole, Huitlacoche Mojo and Chiltepin Salsa. *Yield: 4 rellenos*

Relleno Ingredients:

4 Poblano chiles, prepared for rellenos
4 oz sweet corn kernels, fresh
1 oz corn oil
1 tsp freshly chopped garlic
1/8th tsp chipotle morita, reconstituted in water and finely chopped
2 oz soft dried tomatoes, chopped
6 oz huitlacoche, canned or fresh works well for this dish
6 oz queso fresco, crumbled
2 oz cilantro leaves, left whole but with stems removed

Procedure:

Coat a small sauté pan with the corn oil and sauté the corn kernels and garlic on medium heat for about 3 minutes until the corn starts to soften and the garlic releases its flavor. Season with freshly ground pepper. Remove from heat and place into a medium work bowl. Fold in the chipotle morita, dried tomatoes, and huitlacoche; mix well. Gently fold in the queso fresco and cilantro.

Stuff the poblano chiles with the filling.

Place in a 400 degree oven and bake the rellenos for 10 minutes until they are very hot in the center. Remove and serve with guacamole, huitlacoche mojo and chiltepin salsa on the side.

Chiltepin Salsa. *Yield: 2 cups*

Ingredients:

3 chiltepins
1/2 chopped white onion
1 tbsp dried oregano
4 plum tomatoes, halved and seeded
3 tbsp distilled white wine vinegar
2 tbsp tomato paste
Salt to taste

Procedure:

Puree all ingredients in a blender until completely smooth. Serve.

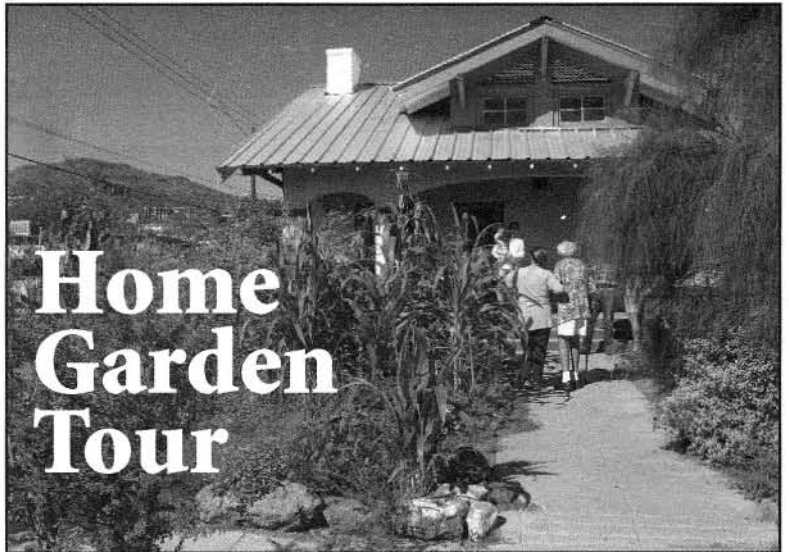
J BAR Guacamole. *Yield: 4 small servings*

Ingredients:

1 avocado
1/2 cup roma tomatoes, finely diced
1/3 tsp jalapenos, seeded and finely diced
1/2 tsp garlic, chopped
1 lime, juiced
1 tsp red onion, finely diced
1 tsp cilantro, roughly chopped
Salt and pepper

Procedure:

Gently combine all ingredients. Serve.



The 2nd Annual NS/S Home Garden Tour on September 10, 2006 was a huge success! Single-handedly organized by Nancy Evans, NS/S volunteer, over 200 people toured six home gardens in the historic Menlo Park Neighborhood, together featuring over 45 varieties of NS/S seeds. With an overwhelming sense of 'community' permeating this year's event, people took the time and opportunity to ask lots of questions and to learn from local experts about home water harvesting. A special thanks to Trader Joe's (Grant Road location) for sponsoring refreshments for the tour and supporting this community event.



Upcoming NS/S Events

Flavors of the Desert

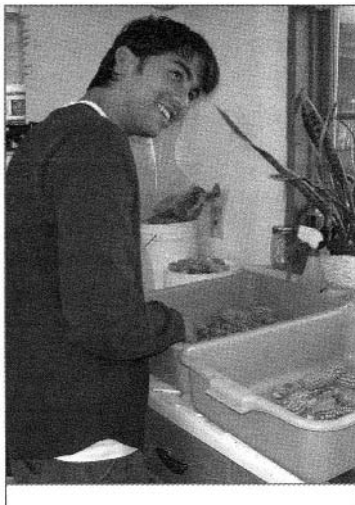
March 11, 2007

University of Arizona Grand Ballroom
Social Hour: 5pm to 6pm ☺ Program & Dinner: 6pm to 9pm
Tickets go on sale online beginning January 2, 2007
See www.nativeseeds.org for complete details

Fourth Avenue Spring Street Fair

March 23–25, 10am to dusk

Stop by the store for Street Fair Specials and get your seeds for Spring planting!



Volunteer Opportunities:

Contact Diana Peel,
Community Relations
Coordinator, at
dpeel@nativeseeds.org,
520.622.5561 or fill out a
volunteer form online at
www.nativeseeds.org

Regularly scheduled volunteer days:

Wednesdays, 10am to 2pm
The Conservation Center
Seed Bank, 2130 N. Alvernon
Way, Tucson, Arizona
*Seed cleaning, record-keeping,
germination tests*

Everyday
Fourth Avenue Gift
Shop/Distribution Center,
526 N. Fourth Avenue,
Tucson, Arizona
*Package seeds, bag beans,
chiles and other native foods*

Other volunteer opportunities:

*Gift Shop Clerks
Weekly Office Assistant
Special events support*

Conservation Farm in Patagonia:

Seasonal volunteer help
needed

News & Notes

Native Seeds/SEARCH recently purchased **Bake Mixes by Junie**, the brainchild of Junie Hostetler, our former Distribution Manager. The purchase of her line of bake mixes allows us to continue offering this unique and particularly Southwestern line through our store, catalog, and website. Under the new brand name, *Flavors of the Desert*, these mixes will also be available in 11 museum, national monument and hotel gift shops.

Many of you will already be familiar with the 15 varieties of mixes for scones, muffins, brownies and hot chocolate blends which Junie created after leaving NS/S. If you're not, we encourage you to try them during this holiday season!



In Memoriam

We regret to note the sudden passing of Thomas Swain of Bedrock, Colorado. Tom was a dedicated events.

Comings and Goings...

An important and happy circumstance of the bake mix purchase is the re-hire of **Amy Schwemm**, former Crop Curator, as Production Specialist. Amy's background in both horticulture and culinary arts makes her the perfect person to continue the work Junie began. Please join us in welcoming Amy back to the NS/S family.



Amy (above) and Carolyn (below).



After four years with Native Seeds/SEARCH, **Evelyn Rens** has accepted a development position with the Southern Arizona AIDS Foundation. Evelyn took on many new tasks while at NS/S and shared her passion for the environment through each grant she wrote. We wish her the best of luck with her new endeavors.

Much to our delight, **Carolyn Owens**, a grant writer with nearly a decade of experience has joined our development team. Her love of writing, cooking and gardening coalesces to make her the perfect match for our team. Carolyn brings deft writing skills, high energy and humor to our staff (she's already organized one 'Pirates Day'!). Join us in welcoming her aboard, matey!

Wishlist

- Lightweight 6 ft. folding tables
- Lightweight, folding display easels
- Folding chairs, new

Native Seeds/SEARCH conserves, distributes and documents the adapted and diverse varieties of agricultural seeds, their wild relatives and the role these seeds play in cultures of the American Southwest and Northwest Mexico.

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Join, renew, or give online at www.nativeseeds.org, or, fill out the form and mail with payment to Native Seeds/SEARCH, 526 N. Fourth Avenue, Tucson, AZ 85705.

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