CONSERVATION YOU CAN TASTE

Best Practices in Heritage Food Recovery and Successes in Restoring Agricultural Biodiversity over the Last Quarter Century
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by Melissa Kogut,
Executive Director, Chefs Collaborative

THERE SHOULD be no doubt that we find ourselves in the midst of a critical change in the way that Americans view food. The popularity and growth of farmers markets, the active engagement of consumers who want to know whether their food contains GMO’s, growth hormones or antibiotics, and the availability of local foods in supermarkets are all evidence of a major shift in our collective thinking. It’s certainly a different landscape than when Chefs Collaborative was founded in 1993, when diners were lucky if the tomatoes on their plates were anything other than the two or three firm, red, tasteless high producing industry standards. Nowadays, delicious varieties of heirloom tomatoes are commonplace on supermarket shelves and restaurant menus.

Chefs – and consumers along with them – have turned to heritage foods for a variety of reasons. Chief among them are taste and chefs’ incurable curiosity for new ingredients and flavors. But it’s also recognition that cultural and biological diversity are essential for the health of the earth and its inhabitants.

As a founding organization of Renewing America’s Food Traditions (RAFT) alliance in 2004, Chefs Collaborative joined with Gary Nabhan, The Center for Sustainable Environments, Slow Food USA, American Livestock Breeds Conservancy, and Seed Savers Exchange, to build awareness about the need for biodiversity in our food system and to encourage action. Our work on the project culminated in a series of Growouts, where more than 50 farmers and 50 chefs in New England joined forces – the farmers
grew specific at-risk varieties with potential for success in the marketplace and the chefs bought these heirloom vegetables and featured them on their menus along with stories. A few varieties became stars among farmers, chefs and consumers – including the Jimmy Nardello pepper and the Gilfeather turnip – and it’s those varieties that have gained a visible toe-hold.

We hope you are as thrilled as we are to see that our collective work on market recovery is having an impact. Now for the first time, we have documentation of the extraordinary growth in the production, sales and use of heritage food. This is cause for celebration. But, it’s also a reminder that absent the work of so many we’re left with homogeneity and large scale monocultures that leave our food supply vulnerable to climate change, diseases and pests. So vive la difference and let’s keep at it!

“It’s been important to have chefs involved on the cutting edge of this work with heirloom vegetables. They’re helping growers figure out the best ways to use their particular heirloom beans so that the farmers can sell them for four dollars a pound like they do at Whole Foods or specialty shops. The chefs are now serving as educators for both growers and consumers, and that’s why they are having such an influence on the public.”

*Paul Wallace, founder, Petaluma Seed Bank*
by Megan Larmer,
Manager of Biodiversity Programs for Slow Food USA

FIVE YEARS AGO, standing in a litter-strewn lot in the midst of one of Chicago’s many urban food deserts, my friends and I saw an orchard. The trees would grow apples we had never seen or tasted before. We called ourselves “urban gardeners” and “community activists” – little did we know we were joining the ranks of “heirloom food preservationists.”

We discovered these rare fruits through the catalogues of Slow Food’s Ark of Taste, Renewing America’s Food Traditions (RAFT), and Seed Savers Exchange. From them, we took our name, the Chicago Rarities Orchard Project (CROP). While time and experience would help us to answer the question “Why rare fruits?,” the truth is: we chose them simply because they fired our imagination.

Living during the depressing reality of the sixth greatest extinction this planet has faced – an extinction caused by humans – there are few tangible, positive actions that everyday people can take. There are fewer still that incorporate pleasure.

Championing, growing and eating endangered foods is something everyone can do. Whether growing on a windowsill or served on fine china, these foods offer a direct path to the creation of a more diverse food system, resulting in a healthier planet.

Through my efforts to steward and expand Slow Food’s Ark of Taste in the USA, I have met hundreds of producers and consumers who first awoke to the challenges and opportunities of battling this great extinction through their taste buds.

Growing and eating foods like Carolina gold rice connects us to our cultural
heritage. Farmers compete more successfully against grocery mega-chains by offering the uniquely shaped Beaver Dam pepper and Amish deer tongue lettuce at farmers markets. The Louisiana Mirliton and Santa Maria Pinquito Bean have DNA encoded with hope for those whose food supplies are so susceptible to climactic disasters. In every case, people stuck with these foods because they could see (and taste) the change their actions made in the world around them.

This report documents the triumph of curiosity and wonder, igniting imagination and innovation. We must continue to work to catalogue and promote heritage foods, so that curious chefs, farmers, activists and eaters can find and experience them. In this document, we have proof that heritage foods are much more than relics – they are the building blocks of a new and vibrant food system that values our natural environment, local food communities and the pleasures of the table.

“Engaging with heritage foods is a kind of antidote to the flattening of our cultures, of our view of the world, and of ourselves within the world. It is an assertion of both our connection to the past and to our role in creating a more diverse future.”

Megan Larmer, Slow Food USA
OVER THE LAST three decades, more than one-hundred thousand plant and animal varieties and species have become endangered around the planet, many of which formerly provided humankind with food or beverages. At the same time, a remarkable counter trend has occurred in America’s gardens and orchards, and on its farms and ranch pastures.

Although virtually unnoticed in some circles, more than fifteen thousand unique vegetable, fruit, legume and grain varieties and dozens of livestock and poultry breeds have returned to U.S. foodscapes, farmers markets, restaurants and home tables over the last quarter century. It has often been repeated that just a hundred or so species of crops and livestock moving through globalized food supply chains provide most of humankind with the bulk of its calories that move through globalized commerce today. In contrast, this survey documents that at least six hundred and forty species are now on the plates of Americans participating in alternative food networks, not counting the many North American edible species of fish, game, shellfish and wild plants.
Curiously, most of these six hundred forty species had been pushed out of the marketplace over the previous century as industrialized agriculture and national grocery store chains consciously or unconsciously reduced the food biodiversity available to nourish our families, friends and communities. And yet, after suffering at least a half century of endangerment, some foods like the range-fed lamb grown by Diné and Hispanic herders of flocks of Navajo-Churro sheep are once again gracing the tables of restaurants every day of the year.

To be sure, no single individual or organization is responsible for such culinary comebacks; it has taken a village of collaborators. And yet, it is fair to say that the innovative

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Between 15,000 and 20,000 varieties of heirloom seeds, fruits and heritage breeds of livestock and poultry of 642 food species now grace American tables, bringing a plethora of flavors, fragrances, colors and textures to us that were unimaginable even a quarter century ago.

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farmers, ranchers, chefs, co-ops, distributors and collectives engaged with this food diversity have been supported more by a dozen national non-profits and regional grassroots alliances than by government agencies, national conservation organizations or universities. America’s repertoire of meats, fruits, grains, vegetables, spices and beverages have been re-diversified, one foodshed at a time.

In particular, the market recovery of what are popularly known as heritage foods—including heirloom vegetables, grains and fruit trees as well as historic breeds of livestock and flocks of so-called poultry antiquities---has been nothing short of miraculous. As you will see
documented over the following pages, varieties and breeds thought to be close to extinction a half century ago are once again being grown by thousands of small scale farmers, and are back on the tables of fine restaurants, brew pubs and home kitchens in every state in the union.

It is our premise that dollar for dollar, support for rescuing, growing and returning heirloom seeds and heritage breeds to the American landscape has been a tremendously cost-effective effort by philanthropic foundations, business, grass roots alliances and non-profits.

The purposes of this survey are threefold. First, we wish to document the extraordinary growth in the production, sales, and use of America's heritage foods over the last five decades. We will give special attention to species and varieties which were on the edge of extinction when certain biocultural conservation efforts and ecogastronomic restoration strategies emerged a quarter century ago. But we are also interested in new farmer-bred varieties selected for flavor.

The heritage food revival of the last quarter century has accomplished one of the highest returns on investment of any public effort to conserve biodiversity in the entire world. It has succeeded in bringing tens of thousands of unique species and varieties back to the table—it is conservation you can taste.

Second, we wish to discern the best practices that food producers, activists, distributors, marketers, journalists, chefs and food activists came upon in advancing the market recovery of particular heritage foods. We include here a number of case studies of particular plant varieties and livestock breeds that have recovered from the brink of extinction. We highlight
the testimonies of early adopters and innovators who nurtured their process of recovery. We also wish to highlight necessary cautions and avoid pitfalls that certain food recovery efforts have encountered. In other words, we hope to learn from our mistakes (and remedy them) as well as learn from the successes that appear to be potentially transferable to other foods at risk.

Third, we wish to propose that new driving factors are emerging that are likely to propel heritage food recovery and food system diversification in new and unforeseen directions over the next quarter century. New challenges are emerging as well. So instead of thinking of food system diversification as a rather “retro” effort in historic preservation or genetic conservation, we predict that future advances will take more dynamic and multi-cultural approaches.

These novel approaches are likely to link these rare seeds and breeds to urban as well as rural food security, seed sovereignty, adaptation to climate change, alternatives to bioengineering and genetic contamination, and the quest for flavor, color and nutritional value. The role of heritage foods in providing nutrient diversity needs to be more widely recognized in the face actor epidemic of obesity, diabetes and heart disease now affecting American youth.

While we have no crystal ball, we feel it is morally necessary to broaden the discussion about heritage food recovery so that the needs of the poor, food insecure, nutritionally-challenged and politically-marginalized populations at risk are more fully taken into account. Already, efforts are underway to assure that heirloom vegetable seeds, seedlings and fruit tree cuttings are made more accessible for low-income families through “seed libraries” and SNAP program benefits, but there remains much more to be done. Thank you for joining us on this journey.

“Heritage foods offer a meaningful dialogue between flavor, nutrition, history and sustainability.” John Forti, Curator of Historic Landscape, Strawberry Banke Museum, Portsmouth NH
What is Food Biodiversity and Why Does It Matter?

Gary Paul Nabhan, Kellogg Endowed Chair in Sustainable Food Systems and founder, Renewing America’s Food Traditions

ALTHOUGH the term biodiversity was not even coined until 1985, the more particular term food biodiversity now helps us describe the cornucopia of distinctive kinds of fruits, nuts, vegetables, tubers, greens, herbs and oilseeds that we intuitively associate with flavor, nutrition, food security, abundance and health. In a broad sense, the actual number of food varieties that we eat is but a fraction of the total agricultural biodiversity on farms and ranches required to assure that food crops and livestock are fed, protected from winds or floods, and supplied with adequate water, forage, nutrients, pollinators and other beneficial insects to assure a harvest. As noted in the book Where Our Food Comes From, “Agricultural biodiversity is embedded in every bite of food we eat, and in every field, orchard, garden, ranch and fish pond that provide us with sustenance and with natural values not fully recognized. It includes the cornucopia of crop seeds and livestock breeds that have been largely domesticated by indigenous stewards to meet their nutritional and cultural needs, as well as the many wild species that interact with them in food-producing habitats. Such domesticated resources cannot be divorced from their caretakers. These caretakers have also cultivated traditional knowledge about how to grow and process foods; such local and indigenous knowledge—just like the seeds it has shaped—is the legacy of countless generations of farming, herding and gardening cultures.”
Close to 7000 species of plants have been cultivated as food crops worldwide, and 200 or so species of mammals, birds, reptiles, amphibians, fish and invertebrates have been raised on farms and ranches. However, just 103 crop plants and 7 livestock species feed the world today in terms of providing the majority of calories and protein consumed in the globalized economy. Since 1973, when the first major study of the genetic vulnerability of our global food supply was published, this narrow genetic base for our food supply has alarmed many scientists and food security planners, especially as another 100,000 kinds of plants and animals have disappeared from our planet over the last four decades.

But what most global surveys have failed to take into account is the tremendous momentum that has been made at the grassroots level in North America and elsewhere in not only conserving but also revitalizing the uses of rare food plant and animal varieties. For example, in 1985, members of just one grassroots organization—the Seed Savers Exchange (SSE)---offered to one another the seeds, tubers and cuttings of about 5000 distinctly listed varieties of food plants. By 1999, the number of unique food plant listings offered for exchange among SSE members broke 20,000—a fourfold increase in less than a decade and a half---and has generally stayed above 20,000 plant variety offerings since then.

Over roughly the same time period, the number of cultivated plant varieties of vegetables, grains, legumes and tubers offered in American seed catalogs has increased from 4989 to well over 8500 distinctive varieties. On a decade by decade basis, this amounts to an average increase of 31% in heirloom and old-standard food plant varieties becoming available to American gardeners. Similar trends, to be discussed below, are occurring across fruit and nut trees, and berry vines from nurseries, and in the registries of livestock breeds. All in all, we now have over 628 species of cultivated food plants and 14 species of large livestock and poultry raised in American foodscapes. That is in addition to over 4000 wild plants and perhaps 250 wild animal species that have historically been used as food on the American continent, many of which grow in open spaces on farms and ranches, or in the ponds, streams or rivers that run through them.
One Indicator of How Heirloom Food Plants are Rediversifying U.S. Gardens and Farms, 1985 to 2013

Growth in the Number of Unique Listings Offered for Exchange by Seed Savers

- Total Listings
This astonishing level of diversity is not simply produced in American gardens, orchards, farms and ranches, but it is more than ever before reaching consumers and chefs. In 1994, there were only 1775 farmers markets in the U.S., but two decades later, there are over 8150, where one in every twenty farmers and ranchers in the country direct-markets at least a portion of her or his production to neighbors.

Obviously, not many of us will ever have the chance to taste even a fraction of the five thousand species that can be used as food on this continent, so why do they matter? Here are just a few of the reasons that they will matter if we are to achieve food security that nourishes our poor, elderly and children, and that sustains the long-term productivity of our foodscapes.

A. Maintaining a diversity of plants and animals on the land and in our waters may be one of the best bet-hedging strategies we have to buffer ourselves from climate uncertainty.

B. Harboring biodiversity on farm allows these plants and animals to provide “ecosystem services” which stabilize yields and reduce required inputs, over and above the calories they produce.

C. A neglected “food rule” to guide our healthy eating patterns is that eating a diversity of varieties of the same foodstuff---apples or salad greens---provides us with a greater diversity of nutrients, probiotics, textures and flavors to keep us fully nourished and protected from disease.

Perhaps the conservation of flavor options and the very pleasure of eating are the least-discussed among all the reasons for attempting to sustain food biodiversity. The following case studies—highlighted as sidebar features scattered throughout this report—remind us that when we conserve food diversity, we are not just saving genes, breeds or species, but we are saving taste, culture and livelihoods. We hope that you will now dive into the details of these conservation success stories for they are truly examples of conservation you can taste.
As of 2005, when Monsanto took control of Seminis, its new subsidiary had already cornered an estimated 40% percent of the U.S. vegetable seed market and 20% of the world market. In other words, one company (Seminis) alone provided the patented or PVPA-certified seedstocks for 85% of the chile and bell peppers, 75% of the tomatoes, and 55% of the lettuce on U.S. supermarket shelves, in addition to having a prominent position in the seed production for beans, broccoli, cabbage, cucumbers, melons, peas, spinach and squash. At both the national and international levels, large U.S.-based seed companies have consolidated power over much of the genetic materials upon which our fresh vegetable supplies and our food security depend.

Nevertheless, there are at least 275 other vegetable seed companies in the U.S. and Canada, up from an all-time low of just 215 companies in 1987. From 1984, when 99 vegetable, grain, legume, tuber and herb varieties were listed in North American seed catalogs, the diversity rose 31% to 6483 varieties in 1994, and increased another 31% to 8494 in 2004. Many on-line, niche market seed listings have cropped up since 2004, making it almost too difficult to track the growth of the seed outlets which are dramatically diversifying the alternative food networks of North America.

But just how are the food networks from farm to restaurant or home kitchen actually diversifying? With data made available from the last twenty-two years from Seed Savers Exchange archives, we tracked fifteen of what were once the rarest annual heirloom crop varieties that have boarded onto the Ark of Taste, from Amish Deer Tongue lettuce to White Sonora wheat. In 1981, most of them were available from only one or two seed catalogs, and only a handful of backyard seed savers grew them, let alone many commercial farmers. Today, these fifteen heirloom varieties are offered by an average of 113 commercial growers who post their produce inventory on localharvest.org, and an average of six catalogs and on-line “mail order” inventories offer their seeds today.

Some of the recoveries—as you can read in the sidebars—are nothing short of
## Factors Driving the Recovery and Use of Heirloom Vegetables and Beans

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miraculous. Amish deer tongue lettuce seed is now offered by 23 seed catalogs and its
fresh greens are found on at least 441 commercial farms. Radiator Charlie’s mortgage lifter
tomato was only offered by Southern Exposure Seeds in the early eighties but is now sold
by 17 different seed catalogs, and is grown on 301 commercial farms in the U.S.

When we try to discern the driving factors of this re-diversification, it is clear that for
the heirloom vegetables, legumes, tuber and grains we selected, the links to local identity,
culture and community were important for most (12) varieties, while taste options to
industrialized food (10) and promoting diversity in backyard production in urban or
suburban settings were key.

While the pace of the genetic engineering of transgenic crops, their patenting and
licensing and potential contamination of open-pollinated vegetable and grain crops
continue to worry food justice activists, potential solutions to some of these problems are
now emerging. For example, the Open Source Seed Initiative has engaged the Organic
Seed Alliance, small seed companies, universities and non-profits in seeking means to
keep vegetable, grain, legume, and tuber varieties in the public domain rather than being
further privatized. In the meantime, planting a diversity of crop species—most of them
still free of any risk of GMO contamination—is the best bet for keeping variety in our
produce in North America.

To get such diversity out to more people—including low-income families—more
than one hundred public access “seed libraries” have cropped up in the U.S. over the last
five years. In addition, food justice activist Daniel Bowman Simon has alerted tens of
thousands of low-income families that their SNAP benefits through USDA Food and
Nutrition programs can be used to purchase heirloom vegetable seeds, seedlings and
fruit tree cuttings to produce diverse food for multiple meals, rather than using the same
support for purchasing just a few meals from a grocery store. Many farmers markets
vendors are now regularly accepting SNAP program payments to put fresh foods and
propagation materials (seeds, cuttings and tubers) in the hands of the poor, but much
more needs to be done along these lines.
Social Network Map of Heritage Food Recovery

- **MILLER**: Jeff and Emma Zimmerman, Hayden Flour Mills
- **BAKER**: Don Guerra, Barrio Bread
- **BAKERS and BACKERS**: Chris and Marco Bianco, Pizzeria Bianco
- **FILM MAKER**: JD Melleland, Rise of the Grains
- **RESEARCHER**: Maribel Alvarez
- **RESEARCHER**: Chris Schmidt, Native Seeds
- **SEED SAVER**: Gary Nabhan
- **SEED PROVIDER**: Glen Roberts, Anson Mills
- **MARKETS**: Arizona Whole Foods Markets
- **FARM TO TABLE CHEFS**: 30+ Arizona Chefs
- **BREWERS**: Boderland Brewery
- **LOCAL GRAIN ECONOMY SOCIAL NETWORK MAP**: Local Grain Economy Social Network Map
- **BREWER**: Boderland Brewery
- **FILM MAKER**: JD Melleland, Rise of the Grains
- **RESEARCHER**: Maribel Alvarez
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WHITE SONORA WHEAT:
Adding Heritage Grains into the Local Foods Mix

Natalie Rachel Morris with Emma Zimmerman,
Marco Bianco and Chris Schmidt

WHEAT seems to be everywhere, but very little heritage wheat or other locally-produced grains have made it into relocalized food systems. Compared to the astounding successes in the recovery of heirloom vegetables and fruits as well as heritage livestock and poultry, the production and acceptance of heritage grains have lagged far behind. At the same time, the number of consumers concerned and perhaps sickened by cereals high in gluten but low in nutritional value seems to be growing.

White Sonora wheat, one of the oldest soft white bread wheat varieties introduced to the Americas, stands on its own for its unique flavor, texture, unusual culinary applications and arid land adaptations. Since its introduction to what is now known as the U.S./Mexico border states in 1640 it has been dry-farmed or grown with rainwater harvesting techniques that use at least a quarter less water per season than required for most modern hybrid wheats.

After centuries of being the primary bread wheat grown in northern Mexico and the American West, its production began to decline around World War II. Fortunately, those who care about culinary quality and aesthetics have been vindicated, for White Sonora has been recently revived and is getting rave reviews from pastry chefs, artisanal millers, bakers and micro-brewers. As such, this ancient wheat has suddenly become a game-changer, teacher and agent for stimulating innovation across the entire food supply chain, particularly in northern California and southern Arizona.

Jeff and Emma Zimmerman are the father/daughter team that own and manage the recently reestablished Hayden Flour Mills in Phoenix, Arizona. They have been pivotal in creating a collaborative network of producers, researchers, millers, marketers, bakers, chefs and consumers enthusiastic about not only the White Sonora wheat, but also heritage grains in general.

As Emma reminds us, “Heritage grains from the pre-industrial era have qualities that artisanal millers seek. And because White Sonora wheat is so arid-adapted, it makes sense to grow it in Arizona. The taste is special too. Chefs often comment on its sweetness and creamy color.”

Two of the community enthusiasts wrote a collaborative grant for the SDA’s Western SARE program in 2011 that helped the Zimmermans coordinate the development of the heritage grain
supply chain and catalyze new innovations within Arizona’s emerging local food community. One of them was Chris Schmidt, Conservation Director at Native Seeds/SEARCH, and the other was Gary Nabhan, who hard learned much from elderly farmers while helping them sow the seeds of White Sonora behind draft animals in traditional floodwater fields in the borderlands. They were both mentored by Glenn Roberts and food anthropologist Maribel Alvarez, who had studied White Sonora in Mexico.

When the incipient collaboration began in Arizona in late 2010, it turned for guidance to Glenn Roberts of Anson Mills, Stephen Jones of Washington State University’s Kneading Conference and Monica Spiller, a historian of heritage grains in California. Monica had assisted farmers Sally Fox and Judith Redmond to evaluate White Sonora and soon Thirsty Bear Brewery in San Francisco elaborated a fine wheat beer from the harvest that Judith helped manage at Full Belly Farms. Inspired by other heritage grain initiatives, just three growers in Arizona initially sowed White Sonora seed on less than twenty acres but, by 2013, both the acreage and the number of farmers had increased.

Emma and her father are still the only artisanal millers in the state of Arizona but they have built a strong cadre of collaborators. “This year we had five farmers growing White Sonora wheat on a total of 66 acres and about 30 chefs and bakers using our White Sonora flour. It’s great to have so many different farmers growing because they all try different methods, unique soil profiles and plant at different times. This means that collectively we are learning a lot about growing heritage grains, which we are learning is very
different from growing modern varieties.”

“The uniqueness of this product has definitely helped us form a natural community of chefs, bakers, growers, and millers. On another level, it is providing an alternative to industrial flour where there wasn’t one before, so it’s really attractive to the natural foods community,” Emma has observed.

Marco Bianco, Breadbaker at Pizzeria Bianco, has worked closely with Hayden Flour Mills to test and develop methods and types of breads that work well with the White Sonora wheat. “I think that we all have helped each other. My brother and I coming in as the bakers, Jeff and Emma Zimmerman, Steve Sossaman, Joe Johnston, Terry Button, Avalon Organic Gardens and the rest. It started triggering a chain reaction; it really has brought our community together and now we are constantly talking about it.”

Emma is seeing the progress in action every day. White Sonora is now being grown again in five states in the U.S. and in the state of Sonora in Mexico. It is one of only two wheats and seven grains boarded onto the Ark of Taste by Slow Food USA. But what matters most to Emma and Jeff Zimmerman, is that both a heritage grain and a network of cooperation and innovation have grown. As Emma reflected on this progress, she added:

“We now have a devoted food community that loves using it for home baking. A heritage food has (collectively) given us a sense of place, like we are connected to the past and now, to a shared future. This heritage food has a compelling story. And I think that once (members of a community) knows the story of a food, we can really taste it in the food.”
“Heritage foods provide us with a living cultural memory of people, history and place. Preserving this diversity also allows farmers and gardeners to develop new varieties, adapting them both for their taste and for their resilience in the face of climate uncertainty and other environmental changes. Thus, they are both connections to the past and to the future.” Tara Hui, co-founder, Guerilla Grafters
HOW DID an heirloom chile pepper rise from obscurity beyond a single county on the “First Coast” of Florida, and spread like wildfire until it reached the tables of Camp David and the White House? How did the Datil pepper seeds move from being totally unavailable in the mail order seed industry in 1981, to being sold by eleven on-line outlets and mail-order catalogs in 2013, with over forty small-scale commercial farms now offering the peppers themselves in eighteen states?

First, there was the pride among Florida Crackers, Minorcan and Cuban immigrants for all things related to the heritage of St. Augustine, the oldest continuously-occupied European settlement and port in the continental United States. But then there are the distinctive features and flavors of the pepper itself.

Former White House Chef David Bearl describes the Datil pepper’s flavor as so unique that he worked it into Presidential dinners that featured
distinctively American foods. “It’s hot, but it’s not too hot. You know, it’s not so hot that it overpowers, but it would if you used too many.” At roughly 2 inches and yellow-orange in color, its heat is deceptive. Its fruitier tropical flavor is the kind that will snag you at the back of the throat when you’re least expecting it. It’s Scoville strength rates at 350,000, putting it in nearly the same range as the Habanero or Scotch Bonnet.

Chef Bearl feels that once people are introduced to it, the Datil pepper definitely sells itself. Although it is related to the fiery Habanero, the Datil sells itself with its fragrances and flavors of tropical fruits. “We did a meat project for a couple years and we started making sausages and things and were putting this pepper in the sausage. And by God did we have a (unique) product.”

Bearl, the former director of the Culinary Arts program at First Coast Technical College in St. Augustine, Florida, has been passionate about the Datil peppers for roughly fifteen years. “If you live in St. Augustine you can’t not hear about the Datil.”

In the 1980s, the seeds were virtually unavailable outside of St. Augustine, and few heirloom seed savers across the country had ever heard of the variety; in fact, the Datil’s cousin, the Habanero, had yet to become a hit in the U.S. Chris Way of Barnacle Bill’s restaurants in St. Augustine began to sell the first commercial Datil pepper hot sauce in 1981, but at that time, you could count the number of small-scale growers of these peppers on one hand.

Then, eight years ago, Bearl saw an opportunity to use the Datil to help connect the growers and consumers in his community. Although locals were already enthusiastic about the pepper and took pride in it, few had access to enough plants to grow for themselves or to sell to the budding Datil pepper microenterprises. He suggested to the college’s horticultural
instructor, Eddie Lambert, that students could learn to grow the peppers, and offer them in containers once a year to raise support for his program; at the same time, Bearl would develop new uses for the Datil with his culinary arts students. Some local companies welcomed the greater supply of Datils at harvest time since they wished to use their prized local heirloom and heritage food to create added value products like hot sauces, barbecue sauces, vinegars, jams, jellies and spice blends and others as the showpiece that spiced up their restaurant menus. Gradually, six new microenterprises along the First Coast began to sell novel Datil products, from mustards to beef jerky.

In essence, Bearl realized that if he could increase the availability of Datil peppers themselves, innovations would follow on their own. “The reason I wrote (our initial Datil pepper) grant was to put some rigor and relevance into our culinary program at First Coast Technical College. I wanted a project that meant something to the community that had some real science in it and that was relevant to the market. And St. Augustine definitely has a market for Datil peppers. It was part economic development. It was part rigor and relevance in the classroom and learning the pepper: where did it come from? how did it get here? and then the science to growing it and holding it, storing it, and value added products.”

The people of St. Augustine have always shared various stories of how the Datil came to their region, but now they have a reinvigorated sense of pride, and therefore, a renewed sense of place. Under the leadership of a young teacher, “Cheech” Villadoniga, the Slow Food First Coast chapter helped board the Datil pepper onto the Slow Food Ark of Taste, and promoted it as part of heritage food tourism in their county.

Today, First Coast Technical College remains the main nursery source of the Datil pepper plants, selling plants and peppers to backyard growers as well as to commercial producers of hot sauces. The pepper has recently caught the eye of the emerging food franchise Firehouse Subs, which offers an
extensive line of hot sauces in each of its prime locations. Not wanting to deviate from the authentic Datil heirloom grown on its old homeground, the company now works exclusively with growers in the St. Augustine vicinity to source roughly 20,000 pounds per year for their Captain Sorensen’s® Datil Pepper Hot Sauce.

The year after Bearl received his grant, the inaugural Datil Pepper Festival was held. Now reaching several thousand people over the two-day event, the festival features professional cook-offs and an amateur hot sauce contest among other Datil-related events.

“The growers are in a good position right now. Everything they grow can be sold. The demand exceeds supply at the moment,” Bearl explains. “And you really only have all the same problems any farm or any product would have. You know, pest control, bacterial or viral infections; the problems are the same. You have similar problems that you have to mitigate.”

In addition to the Datil Pepper Festival, the enthusiasm continues with the Great Chowder Debate, a nearly 30-year tradition featuring Minorcan Clam Chowder made with Datil peppers. “There’s Datil sauce on (every) table. There’s Datil fried shrimp. There’s Minorcan Clam Chowder and there’s sauce contests and things. The summer sausage that we make? It doesn’t matter how much we make; if we put out an email that we have it, it’s gone in less than 24 hours- every bit of it.”

At an average retail price of $3-5 per pound, the cost of the Datil pepper is both affordable for most consumers and equitable for farmers and market gardeners. Because the people of St. Augustine pride themselves on being able to identify a true Datil, virtually all of the growers continue to utilize only the heirloom seed of this variety, and not habaneros or other relatives in their value-added products.

Bearl is aware that the Datil pepper is now grown on a minor scale elsewhere in the country, but feels that its true value is as a place-based food of the First Coast. “A heritage food to me means something with some regional or local value to it. The Datil and St. Augustine are synonymous and it gives it that kind of sense of place all its own. It has a unique St. Augustine character to it because of the Minorcan community. So, it’s (fame has) basically remained local.”

“Heritage fruits and vegetables are the raw materials that drive our vibrant, rapidly evolving food culture. The beauty of these foods is that they create opportunities for chefs, independent farmers, and artisanal producers to forge ahead, even while preserving longstanding traditions. In their hands working with heritage foods, and enriching biodiversity through regional breeding, at once reinvents our cuisine and deepens our sense of place.”

David Buchanan, orchardkeeper, nurseryman from heritage fruit trees, and author of “Taste, Memory,” Portland ME
THE MAKAH OZETTE POTATO, still rare if not threatened, is by far the brightest star in the unique constellation of potatoes found in North America today. Along with the Kasaan and Maria’s potatoes of Southeast Alaska and British Columbia, the Makah Ozette appears to have been brought directly to the Pacific Northwest through Mexico, and indirectly from either Peru or Chile. Nearly all other potatoes now grown in the U.S. came from introductions out of Europe and the British Isles, long after their departure from the Andean highlands. The Spanish-transported ancestor of this potato landed around 1791 on the shores of Neah Bay, near the Makah Indian village of Ozette, on the Olympic Peninsula in Washington.

The Spanish failed to maintain a long-term presence at Neah Bay after the first winter in the harbor proved too severe for the conquistadors’ ships to withstand, and so they left the region, but the potatoes were hardy enough to survive. The spuds the Spanish had planted in their summer garden persisted and soon went feral after the fort was abandoned. Legend has it that the Makah Ozette potato was discovered and adopted by women of the Makah Nation when they were out foraging in 1792. Unbeknownst to anyone outside of their culture, for the next two centuries Makah women took on the role of serving as the sole stewards of their newly found tuber crop, clandestinely cultivating the potato in modest gardens on the rainforest edge.
The story resumes in the late 1980’s when a famous potato grower, David Ronniger, obtained some Makah Ozette “seedstock” from Anna Cheeka of the Makah Nation, and began growing the potato on his farm in Idaho. By the end of the millennium he retired selling his entire inventory to Milk Ranch Specialty Potatoes in Colorado, which remained the only seed company to feature this heirloom for little over a decade. Research conducted in 2004 by graduate students at Washington State University Agricultural Research Center, with the consultation of USDA biologist Chuck Brown, confirmed that the Makah Ozette was one of only three or four heirloom potatoes of the Northwest that had indeed been imported directly from locales along the Pacific coast of Latin America. That fact alone meant that the Makah Ozette deserved protection and celebration.

In 2005, Slow Food Seattle leader Gerry Warren sought to “establish the culinary worthiness of this potato and to assure there would be a seed source sufficient to support a potential market once a demand was demonstrated.” Warren recalls that he hosted many tastings; there, many of the uninitiated came to agree with him “that the Makah Ozette potato has a very pleasant, unique flavor; it smells like good earth and has a somewhat nutty flavor with a lingering finish, much like wine”. As soon as the Makah Ozette had gained some buzz among the Slow Food Seattle membership, Warren spearheaded “a major push through members of the Chefs Collaborative, (to get) chefs to serve these potatoes and tell their story...This was the impetus for telling (potential) growers there was a market for the potato, and more importantly the driving force to convince Pure Potato - a certified potato seed grower in Lynden, WA - to produce certified Makah Ozette seed”.

In 2006, 500 pounds of seed was purchased by Slow Food Seattle from Milk Ranch Specialty Potatoes; these Makah Ozette potato seeds were widely distributed among school gardens and regional farms, including Full Circle Farm. Once harvested, this potato found its way into Seattle restaurants for the first time in history. With Seattle’s most influential chefs on board, Slow Food Seattle had little difficulty gaining considerable press coverage and additional demand for the potato. Warren soon mounted another campaign to further the regional awareness of boarding the Makah Ozette onto the Ark of Taste. The Makah Ozette was soon after featured on the menu of the first Renewing America’s Food Traditions (RAFT) Heritage Picnic in Seattle. In 2008, the Makah Ozette Potato Presidium was officially established by the Slow Food Foundation for Biodiversity, in partnership with tribal members of the Makah Nation, Slow Food Seattle, the Chefs Collaborative Seattle chapter, Full Circle Farm, and Pure Potato. At the presentation of the presidium project to the Tribal Elders of the Makah Nation they asked if there was any way for them to put their mark on it (the potato); after researching this option within the scientific community it was agreed that the potato would officially be called the Makah Ozette potato. The following year Full Circle Farm harvested a bumper crop of the potato, which provided the Essential Baking Company with over 20,000 pounds to feature in their fall season potato bread. Food critics and consumers alike proclaimed that the Makah Ozette bread was the best potato bread the company had ever produced. But hard times for this heirloom food were soon to follow. In 2010, devastating floods nearly eradicated the Makah Ozette potato seed stock at Pure Potato and completely wiped out the crop at Full Circle Farm. Although this was a major setback for the Presidium, recovery efforts are fully underway.

Gerry Warren claims that Marlys Bedlington, owner of Pure Potato, “is the key to the entire (Slow Food Presidium) program... She adopted the idea and pledged to spend her time and resources to bring the potato’s unique genetic material into virus-free seed production.” The original seedstock had
issues with several common diseases that needed to be eliminated in order for certified virus free seed to be available for commercial certified seed production of the Makah Ozette potato. Through the ELISA method of screening the presence of the virus on potatoes in her lab Bedlington can eliminate the potatoes showing signs of infection and increase the “clean” samples for distribution. The “cleaning” process from lab to field takes a minimum of three years. When asked about her initial participation in the project, Marlys recalls that “because there was so much attention to the Makah Ozette potato, I took an interest in playing with it, and this has created a completely different market for the company”.

The Presidium continues to use the services of Pure Potato, which is now entering the third generation phase of procuring certifiable virus-free seed. In Spring of 2014 certified Makah Ozette potato seed will once again be available for distribution with the hope that the Makah Ozette potato will continue to gain more ground. Gerry reports that Slow Food Seattle is also “working closely with elementary schools in the greater Seattle area to develop school garden programs to engage children who are very interested in the story...”

Today, in addition to Pure Potato, Makah Ozette seed can be purchased from Potato Garden, offering Makah Ozette potatoes to gardeners and farmers nationwide, and at least 77 growers have posted on localharvest.org that they have the Ozette potato for sale. The Makah Ozette effort has also inspired the Tlingit near Sitka to share their unique potato with other Alaska natives and to ensure a back of supply of their traditional tuber crop, and the Bodega Red potato is being recovered by Slow Food chapters and growers such as Tierra Vegetables. Once the certified seed of these unique spuds is available on a regular basis they will surely become culinary treasures of the Pacific Northwest once again.
IT IS reputedly the grandfather of long grain rice in the Americas, but antiquity is not all it has going for it. Carolina gold rice is legendary for both its agronomic and culinary qualities, and was once described as “the famous gold seed rice of the Carolinas ranking among the best rices in the world for size, richness of kernel, and large yield.”

Just why or how would anyone ever let something like that slip through their fingers? The early American history of Carolina gold rice and the cuisine of the Carolina Rice Kitchen are inextricably linked through Antebellum culture and the millions of African slaves who expertly cultivated the cereal grain in the Low Country of the South for well over a century. By the late 1700’s, it had become the most prominent and commercial staple grain in the coastal lands of the Carolina Territory. It brought wealth to those who produced it, but more than that, it became the defining element of what is known as America’s first distinctive Creole Cuisine:
the “Carolina Rice Kitchen,” a synthesis of unique ingredients and cooking techniques that has had staying power over centuries.

Nevertheless, after the Civil War the glory of Carolina gold rice went into plunge with the liberation of the work force which knew best how to cultivate and to cook it, successive years of massive flooding from hurricanes, and the introduction of more competitive and productive Asian varieties of rice. As these introduced varieties usurped its place in the global marketplace, the culture and cuisine associated the Carolina gold rice virtually went extinct in North America.

And yet, because Carolina gold seed rice had garnered such great repute in the 19th century, and it remained in cultivation in a number of small pockets around the world - “being passed from person to person and generation to generation” – it somehow persisted as a true heirloom. In the 1980’s Dr. Richard Schulze secured some foundation seed from Dr. Anna McLung and the Texas Rice Improvement Association’s seed program located at the Texas A&M AgriLIFE Research Center in Beaumont, TX. Schulze re-introduced the grain to its Low Country home, starting with his own fields on the Turnbridge Plantation, and donated all of his harvests to the Church of the Holy Trinity in Hardeeville, SC, which then bagged the rice and sold it to contribute to the Episcopal Mission Fund for famine relief. Around this same time period, Glenn Roberts, President and Founder of Anson Mills, became intrigued by the challenges of assuring secure seed supplies of Carolina gold rice for
farmers who wanted to ramp up its production, and of restoring the cuisine of the Carolina Rice Kitchen. In 2004, Roberts and his colleagues established the Carolina gold Rice Foundation to “advance the sustainable restoration and preservation of Carolina gold rice...and raise public awareness of historic rice lands and heirloom agriculture.”

Today the Foundation - in conjunction with Anson Mills, the Texas Rice Improvement Association, Clemson University Coastal Research & Educational Center, and the Dale Bumpers Rice Research Institute for seed bio-security - continues to coordinate seed increase and exchange, conduct horticultural research, and support the restoration of historic rice fields in South Carolina and east Texas. One indicator of their success is that the growers associated with the Anson Mills collective alone are producing over 600 acres of this grain, the largest production of it in North America for over a century. Once the harvest is carefully cleaned, stored and packaged, it lands in at least 3000 American restaurants and countless households, many of them in the very same region where this heirloom was historically grown.

But the work is not yet over. Securing and legally protecting low-lying fields that offer optimal conditions for the growth of this rice, overcoming the constraints that limit current production, and
assuring economic needs of growers, millers and chefs are met are among the current challenges of Anson Mills and the Foundation. As a crop suited to cultivation on floodplains near the coast, it remains vulnerable to massive flooding and susceptible to the catastrophic events that are becoming more frequent with accelerated climate change. As such, “the storage of three years worth of uncontaminated seed is critical to preventing a complete collapse of the commercial crop” Roberts cautions those who may think there will inevitably be instant access to foundation seed. Additionally, Roberts says that “adoption of sustainable practices such as SRI – a rigorous System of Rice Intensification – with mixed cropping, polycultures, and whole farm husbandry will be integral to the success and increased production of the rice”.

Today, just a handful of farms outside the Anson Mills co-op produce the rice, and they are scattered between the Carolinas and Texas. One notable new development is the activity of Campbell Coxe of Carolina Plantation Rice, who is currently working to ramp up his production to 50 acres of rice in South Carolina. Meanwhile, at Anson Mills, Roberts continues his focus on pre-industrialization practices that produce a grain that is a bit more expensive (than machine harvested rice), contains exceptional nutritional value, and stunning aromas and flavors; the only drawback is that Anson Mills’ hand-harvested rice is very perishable. Because of this, Roberts is very particular about how his products are shipped and how they are handled once they are received by Anson Mills’ 4000 chef clients worldwide. Anson Mills also offers tours regularly and Roberts encourages the chefs to hand harvest the Carolina gold rice - to cut, thresh, winnow and pound all by hand - “so that they can appreciate what we do...when chefs come here and work with us, they immediately understand why the prices are what they are”.

Glenn Roberts well understands that his vertically-integrated approach to on-farm research, historic research, seed increase, new farmer mentoring, seed cleaning, packaging and delivery goes far beyond what many other heritage food promoters are currently capable of undertaking:

“What I do is truly unique. By the time I have a mature product available to sell, we’ve invested over $3 per pound into it, not including the production of the seed, which I’ve provided the farm free of charge...But (I do it this way because) I’m not just making rice available to the public, I’m building (long-term) seed biosecurity.”

Repatriation of Carolina gold to the Low Country has taken place slowly, yet it is gaining momentum. And now, what is re-emerging is that this Antebellum heirloom grain is found once again in its proper place in many dishes originating from the Carolina Rice Kitchen table. Thankfully, Carolina gold rice is also turning up in restaurant dishes all across the country, not just on its cradle of origin.
GOING VIRAL or going global are not the only indicators of recovery for a heritage food. Sometimes, in fact, the best indicator is the opposite of making it big, far and wide: it is regional community taking pride in a food of theirs being celebrated on its own home ground, up close and personal. The Pinquito bean of the Santa Maria Valley in California has had just that kind of success.

North of Santa Barbara along the Central Coast, there are a dozen or so farming, fishing and ranching towns where Saturday afternoons are dedicated to visiting tailgate lunch fare in parking lots. For the most part, these low-price meals benefit churches, schools, social services and non-profits in the Santa Maria Valley. Nearly all of the tailgate parties there feature Santa Maria barbecue elaborated from tri-tip beef grilled in a pit over an oak fire, with a side of garlic-infused Pinquito beans, French bread, salsa and a tossed salad. On weekends during the summer, signs for these Santa Maria barbecue benefits are ubiquitous from Pismo Beach down to Hollister Ranch, especially around Santa Maria, Orcutt, Lompoc and Arroyo Grande, Mexican-, Italian-, Portuguese- and Asian-Americans all favor the little pink, pea-sized Pinquito as a savory side dish or in a bean salad steeped in wine vinegar.

Today, it is not at all hard to find Pinquito beans and packets of Santa Maria-style seasoning along the Central Coast. From Santa Barbara to San Luis Obispo, there are over ninety corner markets, chain grocery stores, gift shops and cafes which sell dry Pinquito beans and other Santa Maria barbecue fixins in twenty-five different towns. And yet, you can now count the number of Pinquito bean farmers, and their cleaning and bagging mills on one hand. These commercial Pinquito farmers and distributors are most over sixty although they remain active in their businesses and in service to their communities. Nevertheless, they will clearly need to enlist some new personalities to step up to the plate (of beans) over the next decade.

Although best known along the Central Coast, there are some promising new innovations that have reinforced the cultivation and distribution of Pinquitos and other heirloom beans in California. Wayne and Lee James of Tierra Vegetables now
grow them to feature at their farm stand just outside Santa Rosa, California, along with a half dozen other heirloom beans of distinction. And California’s most popular promoter of heirloom beans, Steve Sando of Rancho Gordo New World Specialty Foods, has made sure that Pinquitos are one of the twenty-five heirloom beans featured at San Francisco’s Ferry Plaza Marketplace, and at many of his ninety other retail outlets in California, from San Diego to Ukiah.

When reminded that a writer for Wine Spectator suggested that he “is changing the way we think about beans,” Steve might let out a wild laugh and roll his eyes. “My role is simple: I bring great chefs with me to farmers markets, and with them, I break down people’s fear that making great beans is difficult to do. When they first pick up one of my packages of heirloom beans, they sometimes look at it like it’s a bunch of rocks. Some people don’t even try to cook some things for fear of messing them up...they’re in the headlights, so to speak. They need to gain enough confidence to be able to transform what looks like dry pebbles into something creamy and delicious.”

Most heirloom beans are good for eater because of their flavor, minerals and soluble fiber, but they can also be good to farmers. Rancho Gordo has joined forces with Xoxoc, a Mexican family business, “to help small farmers continue to grow their indigenous crops in Mexico, despite international trade policies that seem to discourage genetic diversity and local food traditions.” Rancho
Gordo pays farmers better than commodity prices for heirloom beans of higher culinary quality. This is but one more example of how enlightened entrepreneurs can recover and promote food biodiversity with as much or more success as government agencies and non-profits have garnered. Today, Rancho Gordo supports more than 35 farming families who get paid well for their excellent production and processing of heirloom beans such as the Santa Maria Pinquito.

“My role at farmers markets is to bring down young people’s fear that making great beans is difficult to do. When they first pick up one of my packages of heirloom beans, they look at it like it’s a bunch of rocks. Some people don’t even try to cook some things for fear of messing them up... they’re in the headlights, so to speak. They need to given enough confidence to know that they themselves can transform what looks like dry pebbles into something creamy and delicious.”  

Steve Sando, founder, Rancho Gordo Beans, Napa Valley, CA
“People have a very real need to eat, and many of these heritage foods have the ability to stave off hunger because they are differentially adapted to each region’s climate variability, soil types, pests, pollinators and plant communities. These are the varieties that have developed in place and have withstood the test of time.” Rafael de Grenade, young agrarian, and food geographer, University of Arizona, Tucson AZ.
THE NUMBER of orchards maintained in the U.S. has suffered a precipitous decline over the last century. For example, there were over 200 million apple trees in home and commercial orchards in the U.S. a century ago, and by 1950, there were less than 50 million apple trees left in the U.S. Today there are only 7500 commercial apple orchards in the country, and their acreage has declined by 15% since 1997. Today, 90 percent of all apples sold in chain grocery stores in our country come from just 11 varieties of the 3000 varieties still available through on-line sources or catalogs. Six of the major apple juice producers in the U.S. have gone out of business since 2001, leaving only two U.S.-based companies to compete with China for providing our populace with both apple juice and frozen puree. Similar statistics could be offered for other fruits and nuts.

Despite such consolidation and outsourcing, there were at least 275 fruit, nut and berry nurseries companies with catalogs or on-line listings in the U.S. and Canada by 2009, up from 248 companies in 1987. These 275 inventories offer over 8750 fruit, nut and berry varieties to American and Canadian orchard-keepers in North America today.

While hundreds of independently-owned nurseries have closed their gates due to the proliferation of “psuedo-nursery” garden centers attached to big box stores, other modes of fruit and nut tree exchange have emerged. Today, thousands of orchard-keepers come to exchange scion wood and learn grafting techniques at seasonal events sponsored by the Home Orchard Society in the Northwest, MOFGA in Maine, the Worcester County Horticultural Society in Massachusetts, the Midwestern Fruit Explorers, and California Rare Fruit Explorers.

The driving factor that appears most important to the re-diversification of fruit and nut orchards is the opportunity to access taste options not available in a few standard varieties; adding diversity to home orchards with urban and suburban areas is also catching wind. These taste options not only include the flavor profiles of fresh dessert apples, but a revival of hard cider and fruit brandy making in the United
## Factors Driving the Recovery and Use of Heirloom Fruits, Nuts and Oil Trees

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<th>Health benefits related to nutritional value</th>
<th>Reaching youth, elders and low income households</th>
<th>Promoting diversity in urban/sub-urban backyard food production</th>
<th>Recovering from climate catastrophes, adapting to change</th>
<th>Providing taste/options to GMOs or industrial processed foods</th>
<th>Focus on artisanal processing, jobs in local economies</th>
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States. Many apples and pears that fell out of fashion during Prohibition for lack of ship-ability or fresh eating quality are now being rediscovered by cider makers and brandy distillers. If it were not for the interest of apple brandy makers at Germain-Robin artisanal distillers near Ukiah, California, the Sierra Beauty apple would have little value-added market distinction. The artisanal cider makers and distillers emerging all across North America will often pay twice the value per ton of fruit that orchard-keepers can garner from groceries or at roadside stands. As such, artisanal processing of ciders and spirits—like heirloom-focused farmers markets and festivals—are literally keeping dozens of fruit varieties alive that might otherwise go extinct.

Of the fourteen fruits, nuts and berries now boarded onto the Ark of Taste that we selected for study, the average number of nurseries carrying them is 2.6, and an average of 11.5 growers are now making part of their livelihoods by direct-marketing these fruits or their value-added products to the public. The Meyer lemon is being offered through the largest number of nurseries (17), and it also has the most growers who list on localharvest.org (73), while most other heirloom rarities still have less than ten growers nationwide. The Mission olive of California and Arizona is next in importance, with 17 growers, most of whom cold-press its extra virgin olive oil. Because of the longer time to maturation and harvest for tree crops than for field vegetables, it is not surprising that the pace of recovery for fruits, nuts and berries lags far behind that for annual field crops. They are also more vulnerable to climate change, since many of them are typically long-lived so can suffer dramatic changes in climate over their life time.

“One reason we are still making a table wine from our acre of Mission grapes is that it was the first European variety brought to the New World and was originally planted not too far from us in southern New Mexico in 1629. It has been passed down and planted as an heirloom variety in our region for over three hundred and eighty years. So we are doing it as much for posterity and for the future as we are for profit. It’s our modest contribution to maintaining traditions.”

Chris Wickham, Vitner, Tularosa Vineyards, Tularosa NM
“When Wendell Berry said ‘Whether we and our politicians know it or not, Nature is party to all our deals and deliberations, and she has more votes, a longer memory, and a sterner sense of justice than we do,’ he meant that nature absolutely insists upon biodiversity. And if we humans attempt to subvert that order, nature will thrust it upon us. A localized and sustainable food system will happen, but it will happen either the easy way, or the hard way. The easy way is not all that easy, but the hard way is desperately, Dust Bowl hard.”

Chef Kurt Michael Friese, founder, Devotay and Edible Iowa River Valley. Iowa City, IA
HARRISON CIDER APPLES:  
From the Brink of Extinction to Cidermakers’ Revelation

Gary Paul Nabhan with Ben Watson, Tom Burford,  
Charlotte and Chuck Shelton and Diane Flynt

IT HAD BEEN thought to have gone extinct, which unsettled heirloom apple experts for years, given the accolades it received in its mid-Atlantic homeland during the nineteenth century: “New Jersey is the most celebrated cider-making district in America, and this apple...has long enjoyed the highest reputation as a cider fruit, “wrote Downing in 1846 . “Ten bushels make a barrel of cider. The tree grows thriftily and bears very large crops.” For making a single variety hard cider, the Harrison commanded the highest price of any apple coming into the New York market, but when its juices were blended with juices from the Graniwinkle, the Harrison produced the most popular fine cider made in the entire country.

Then it disappeared... but believing in miracles and loving historic sleuthing, the Dean of American apples, Tom Burford, kept his ears open. In 1976,
Paul Gidez sensed he found a surviving Harrison in Essex County, New Jersey, where it had been described decades before, and later reported it to Tom. At last, in 1989, Tom was taken to meet an elderly gentleman who had retained a seventy-five year old tree in his derelict orchard near the town of Peramus, New Jersey. After dinner, the elder took Tom out to see the ancient tree, where Tom confirmed what his friend had suspected: the Harrison cider apple was not extinct at all, but just out of commercial cultivation. From that day on, Tom set out to bring Harrison back to the marketplace, and has since found other Harrison trees surviving in New Jersey, Maryland and Virginia.

Fortunately, “Professor Apple,” as Tom is called today, is as good as an orchard-keeper’s and cidermaker’s mentor as he is a nurseryman, historian and sleuth. As Stuart Madany of Castle Hill cidery once commented, “Tom can really romance one with the intrigues of apple growing.” Burford has not only done so with the Castle Hill staff, but with the Shelton family of Albemarle Ciderworks and Vintage Virginia Apples, and with the Flynts at Foggy Ridge Cider near the Blue Ridge Parkway. Grafted Harrison apple trees are now being offered by Vintage Virginia Apples, Fedco Trees, Trees of Antiquity, Big Horse Creek Farm, Cummins Nursery, and Northwest Cider Supply. While Diane Flynt, Stuart Madany, and the Sheltons have surely had an inspiring mentor, they have each added their own legitimate contributions to the recovery of Harrison, to other rare heirloom apples, and to the hard cider revival in general. Diane Flynt, like Charlotte Shelton at Abemarle Ciderworks, was an accomplished businesswoman before she took up
cidermaking in the mid-1990s. She sought out the best American and English cidermakers as teachers, planted rare but richly-flavored heirlooms such as the Harrison, and refined a business plan and distribution strategy that already gets her fine heirloom apple ciders out to over one hundred and seventy taverns, pubs, restaurants and specialty shops in four states. Along with Chuck and Charlotte Shelton, Flynt helped convince their state governor to sponsor Virginia Cider Week, which has exposed thousands of the uninitiated to the realization that apples are as good to drink as they are to eat. Now in its second year, Cider Week features dozens of tastings, pairings, dinners and lectures that not only promote the Harrison, but other rare apples such Ashmead’s kernel, Graniwinkle, Roxbury russet and Hewe’s Virginia crab. While Harrison is now back in cultivation as far north as Maine, and as far west as Wyoming, roughly 81% of the 3000 apple varieties still being offered by one or more North American nurseries is still considered endangered. The Harrison may have survived, but perhaps as many as 15,000 other apple varieties named and historically grown in the U.S. did not.

The hope among cider apple historians like Ben Watson is the renaissance of hard cider in America will keep many other heirloom apples from falling out of cultivation and off our tables. Watson, an apple grower, former co-chair of the U.S. Ark of Taste committee and
representative to the International Ark Commission, believes that we are at a pivotal point in America’s relationship with apples:

“I think we’re discovering in some senses what was known and done two hundred years ago, but on the other hand, people are discovering some unique qualities of these apples on their own and making their own decisions about how to use them…Many Americans, including children, are fascinated by the myriad shapes, colors and flavors once they have had the opportunity to see and taste them. As such, we see the apple as totemic—a democratic fruit that is as diverse as America itself.”

This, Ben hopes, “will hopefully recruit and engage the next generation of apple stewards on this continent.”

“We began to see the market as a hub for community restoration, (since) markets, like dinner tables, help to define our sense of place.” Richard McCarthy, Director, Slow Food USA, and co-founder of the Crescent City Farmers Market, New Orleans LA
HERITAGE AGRI-TOURISM
As a Strategy for Promoting the Recovery of Heirloom Vegetables, Grains, Fruits and Rare Breeds

Rafael de Grenade

“Heritage foods foster the best kind of tourism. We travel to see something different and discover that the tastes of heritage foods are different, wherever we go.”

Megan Kimble, Edible Baja Arizona

HERITAGE TOURISM offers a very real way to know the unique character and flavors of a place. The mere act of tasting these foods and seeing them grown or prepared can be effective strategies that foster the revitalization of local or regional foodways. Traditional foods hold more than the genetic history of a lineage as it has adapted over time; they are also filled with the stories of generations of the bonds between humans and the place itself.

If chefs, journalists, food historians and agri-tourists can directly hear these stories as they see and taste these foods, they are likely to become enthusiastic allies in heritage food recovery efforts. One bite of a taco made of freshly made *nixtamal* and carne asada, sprinkled in crushed chiltepínes, wild oregano and queso asadero, or a tepary bean burrito wrapped in a giant flour tortilla connects us with a food stories that reaches back through countless generations of farmers, ranchers, migrants, and explorers. It re-enacts centuries of tradition and innovation in both agriculture and cooking practices. A single bite can include several food varieties on the Slow Food Ark of Taste, and thereby prompt a story long enough to fill several nights running of how a place and its people came to be.

Promoting heritage foods through agri-tourism trails has the potential to stimulate the recovery of a region’s unique varieties—ones prone to disappearance as we lose small family farms and restaurants around the country. Inviting people out to meet farmers and experience the flavors that tell these stories is not just about generating economic revenue in a region, but a way of promoting the cultivation, cooking, and recovery of many foods that may otherwise be lost to the local, national and global palette. Heritage food tours offer community
members the chance to meet local farmers and see the local varieties growing in the fields or at various stages of harvest. A visit to local artisan markets and factories can give people real insight into the practices involved in turning the food from the farm into value-added products. And tasting local dishes prepared by chefs who incorporate these flavors into their recipes can provide a holistic experience of farm to plate.

Heritage food tours can foster a lasting connection within a community among its producers, millers, brewers, butchers, bakers, and other artisans. Forging such relationships at an appropriate scale can easily make a difference as these foodways begin to recover in a region, for they spread the stories of the uniqueness of such heritage foods and promote their market recovery. Many of these crop varieties and livestock breeds are not yet suitable for large scale production, so small producers need to find viable niche markets for their value-added products without having the initial capacity to invest in costly advertising or distribution networks. By bringing people to the farm instead of bringing the farm to the people, such a grassroots process of relationship-building can, and hopefully it will “go viral.” Heritage food tourism gives people the tangible opportunity to viscerally link their regional sense of taste with a unique sense of taste, so that specific heritage foods can again find their places in the fields and on the table.

Across the United States, groups interested in promoting their region’s unique flavors and heritage food trails are promoting and experimenting with various forms of heritage tourism. Guides such as *Home Grown Indiana: A Food Lover’s Guide to Good Eating in the Hoosier State*; *Food Lovers’ Guide to Colorado*; and *Homegrown and Handmade: Art Roads and Farm Trails in North Carolina* showcase the farms, restaurants, flavors and crafts that keep these unique regional culinary traditions alive.
Some of these guides are in printed forms as books or booklets, while others are downloadable apps. The National Trust for Historic Preservation has a website on how to develop cultural heritage tourism, and several Heritage Area initiatives such as the Maryland Historical Trust Heritage Areas program, Santa Cruz Valley Heritage Alliance in Arizona, the Blue Ridge National Heritage Area and Foodtopia in North Carolina, the Atchafalaya National Heritage Area in Louisiana promote regional food tourism. The book *Renewing America’s Food Traditions* and the websites for the Slow Food Ark of Taste and Local Harvest feature several hundred rare and recovering food varieties listed by region, state, landscape or farm. You can use these lists and add to them as means to educate and promote the cultivation and foodways practices of those varieties and breeds most at risk on your own homeground.

Recently, I led a Heritage Foods of the Borderlands pilot tour to explore the potential
of bringing people on a visit of farms and flavors in the borderlands of southeastern Arizona. The idea for the tours emerged out of innovative collaborations among the University of Arizona’s College of Social and Behavioral Sciences and its the Southwest Center, the Santa Cruz Valley Heritage Alliance, the City of Tucson, and Pima County Parks and Recreation Department. We focused on foods recently nominated or already boarded onto the Slow Food Ark of Taste. Our journey began in Tucson, at the San Agustin Mission Garden, where the Friends of Tucson’s Birthplace have worked to create a four-acre reconstruction of the original mission garden. It features heritage fruit trees such as Sonoran quince, Papago pomegranate, Mission grape, Mission olive and Mission fig trees, as well as traditional field crops of the region. We then visited the San Xavier Coop Farm where racks of a variety of O’odham 60-day corn dried along with red chiles and mesquite beans. A Tohono O’odham elder explained the process of grinding the dried corn and grinding the mesquite to make traditional dishes. Tour participants also had the opportunity to purchase green striped cushaw squash, yellow-meated watermelons, mottled lima beans, and tepary beans—all foods with a long tenure in the desert Southwest. We followed the Santa Cruz River upstream toward the Mexican Border, retracing a river corridor that has served as a circulatory system for farming peoples, migrants, and explorers through millennia. We also visited the Tumacacori National Historic Park to visit the mission, learn of Spanish acequia (canal) systems and see the young Kino Fruit Trees Orchard with its heritage fruit varieties. The
visitor’s center itself has pomegranate bushes that may be almost a century old, as well as Mission olive trees, apricot, sour orange and pear trees, protected in the adobe courtyard.

Among the day’s flavor highlights was the lunch provided by Avalon Gardens including handmade tortillas made from the rare White Sonora wheat; and tacos from freshly ground corn (nixtamal) at the Native Seed/SEARCH Conservation Farm. We sampled Mission olives, prickly pear lemonade and local bacanora mescal at the Almunia de los Zopilotes Experiment Orchard in Patagonia as well, where eighty heritage varieties of fruits and nuts now grow. We ended our day at the new Overland Trout Restaurant in Sonoita, where Chef Greg LaPrad treated us to a diverse menu of locally produced Ark of Taste foods and Mission grape wine provided by Sonoita Vineyards. The day blended heritage food cultivation, agricultural geography, flavor, and recipes, all to promote heritage foods conservation and market recovery.

Heritage food tours can teach us of how the regional blend of flavors and foodways practices reveals a long and complex history informed by the particular geography of the place, its climate, soils, native plant and animal communities, and its people. We can remember how farmers have selected and propagated varieties of corn, beans, squash, amaranths, and chiles over years of farming in North America. We can also savor the more

“In the food deserts found on American Indian reservations, where diabetes affects large sectors of the population, a new interest in reviving nutritious, traditional native foods is emerging among health conscious tribal youth. When these young people engage with the traditions of their elders, a vital link is forged between the past and the future - a link which ensures the survival of ancestral knowledge and revitalizes the traditions which, for centuries, enabled good health, strong communities, and food security for tribal people.”
Gay Chanler, chef, rural anthropologist and founder of the Navajo-Churro Sheep Presidia, Flagstaff AZ
recent contributions made by European, African, Asian and Latin American immigrants who brought with them certain grains, vegetables, forage crops and fruit trees that have adapted to this place over the last three centuries. We can learn how these crops adapted to the climate and soils, and became intricately woven into the cultural fabric of the region.

Heritage food tourism is a way of embracing, nurturing, and embracing our collective identity as multi-ethnic Americans, connecting with our places and our palette, honoring the past and reaching toward the future; and experiencing a delicious and diverse present moment wherever we live and eat.
WE NOW LIVE in a nation where the top five meat processing and packaging companies control 78% of the U.S. market. They primarily sell to the top ten grocery store chains-- whose supermarkets control 55% of their market-- and to the top ten fast food/restaurant chains, which control 45% of their market. In 1987, there were about 2500 companies that produced egg-laying hens in the U.S.; now, less than 200 companies in the U.S. produced 95% of all laying hens. Similarly, just four turkey breeding companies produce 95% of all of the world’s turkey poults, and they exclusively raise the highly uniform White turkey.

This has left little room in the commodity markets for subdominant breeds of livestock and poultry. According to the Encyclopedia of Historic and Endangered Livestock and Poultry Breeds, there are 191 breeds of rare or endangered poultry and livestock breeds (including equines) in North America and the British Isles, including 53 breeds of poultry with eggs or meat that are marketed, 61 breeds of large livestock with meat or milk that is marketed in North America. Of these, the American Livestock Conservancy now considers 52 of the breeds of food-producing animals (other than equines) critically endangered, and 35 of them threatened. That means that over three-quarters of America’s distinctive breeds of cattle remain in the two most endangered categories.

And yet, thanks to the many minor breed registries and technical support groups like the American Livestock Conservancy, the recovery trends for many of rarest poultry and livestock breeds boarded on the Slow Food Ark of Taste look very good.

Of ten of the rarest livestock breeds, eight have shown modest population recovery since 1999; for poultry breeds, nine of the rarest thirteen poultry breeds have also shown tremendous levels of recovery since then. The differences in
# Factors Driving the Recovery and Use of Heritage Livestock and Poultry Breeds

<table>
<thead>
<tr>
<th></th>
<th>Link to recovery of local identity, culture and community</th>
<th>Health benefits related to nutritional value</th>
<th>Promoting diversity in urban/suburban backyard food production</th>
<th>Recovering from climate catastrophes, adapting to change</th>
<th>Providing grassfed taste options to CAFOs or feedlots</th>
<th>Focus on artisanal processing, jobs in local economies</th>
<th>Role in land restoration or weed control</th>
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<td>11 (meat)</td>
<td>18 (meat)</td>
<td>&gt;5000</td>
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recovery rates are related to the differences in fecundity rates and lifespan, particularly between large livestock and poultry. Today, there are at least 263 producers in the U.S. selling meat, milk or cheese from these recovering breeds of livestock, and another 1064 producers selling eggs or meat of recovery poultry breeds.

One of the first collaborative efforts toward market recovery of rare poultry breeds brought Frank Reese and his Good Shepard Turkey Ranch network together with Slow Food USA and the American Livestock Conservancy (then known as ALBC). Slow Food USA’s first director Patrick Martins then went on to co-found Heritage Foods USA, which now moves into the market place an average of 50,000 pounds of pork from 200 pigs of heritage breeds per week. Heritage Foods also features once-a-year mail order campaigns that move 6000 to 7000 turkeys of heritage breeds each November in advance of Thanksgiving, 1000 heritage goats each October, 1500 heritage ducks and geese each December in advance of Christmas, Hanukah and New Year’s, and close to 1000 half lamb packages of four heritage breeds in March in advance of Passover and Easter. These collaborations with Heritage Foods USA now provide the primary source of income from thirty to thirty-five farming families across the country. Martins attributes much of his success in fostering the market recovery of rare breeds to the commitment many chefs have made to paying a fixed price per pound to the farmers and ranchers who maintain populations of these rare but recovering livestock breeds:

“The chefs have really rallied behind the notion of restaurant-supported agriculture. They have helped maintain a beautiful landscape all across America, through which something akin to an ‘underground railroad’ functions to keep these imperiled heritage breeds alive.”
## Heritage POULTRY Recovery Trends

<table>
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<th>POULTRY</th>
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<th>2003 ALBC number of breeding animals registered</th>
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<td>&lt;500</td>
<td>368</td>
<td>24 (egg)</td>
<td></td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>New Hampshire chicken</td>
<td></td>
<td>3933</td>
<td></td>
<td>24 (egg)</td>
<td></td>
<td>&lt;1000</td>
<td></td>
</tr>
<tr>
<td>Royal palm turkey</td>
<td>450</td>
<td>818</td>
<td>1585</td>
<td>16</td>
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<td>Slate turkey</td>
<td>77</td>
<td>437</td>
<td>1190</td>
<td>15</td>
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<tr>
<td>American bronze turkey</td>
<td></td>
<td>441</td>
<td>1938</td>
<td>17</td>
<td></td>
<td>137</td>
<td></td>
</tr>
<tr>
<td>Black turkey</td>
<td></td>
<td>478</td>
<td>1163</td>
<td>10</td>
<td></td>
<td>51</td>
<td></td>
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<tr>
<td>Bourbon red turkey</td>
<td>714</td>
<td>1519</td>
<td>2286</td>
<td>40</td>
<td></td>
<td>288</td>
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“Part of the responsibility that comes with maintaining a unique collection of fruit and vegetable varieties is understanding as much as we can about each one. To gain this understanding, every summer—in addition to growing varieties that are in need of refreshed or increased stock—we also grow a portion of our collection for evaluation purposes. This year we are growing more than 400 varieties of heirloom seed in our evaluation gardens to collect data on traits such as color, days to maturity, and fruit size, to name a few. This includes evaluating 40 varieties of beans and will classify them as snap beans, shelling beans, or dry beans. We also evaluate how a variety might do in the marketplace, considering taste and culinary usage.”

John Torgrimson, Director, Seed Savers Exchange, Decorah IA
LOTS HAVE changed since the entire population of bison—the North American buffalo—plummeted to just a thousand animals on the entire continent a little more than a century ago. And yet, even after bison numbers had recovered in the seventies, Americans were not exactly sure that they wanted to eat buffalo burgers and steaks.

Steve Hauff, the president of the South Dakota-based Prairie Harvest, has been selling buffalo meat for 32 years. “The first 15 years, we were battling the fact that most people saw the buffalo as a giant hairball,” he said. “We were shipping buffalo tenderloins to the Four Seasons restaurant in New York City. We were buying them from ranches here in South Dakota. Every time I’d call (the meat processor) and place an order for the tenderloins, I’d hear the workers giggle and ask each other, ‘He’s really going to pay for that?’”

But as consumers gained access to flavorful, quality cuts, they became more intrigued by the health benefits of buffalo meat, and the role free-ranging bison populations play in grassland restoration. Since 2003, when two million pounds of buffalo meat reached American consumers, demand
and consumption have more than quadrupled. According to Bob Dineen of Rocky Mountain Natural Meats, 50,000 bison have been annually slaughtered in recent years under USDA inspection; as many as 30,000 more are processed under state inspection. That does not put much of a dent in bison population recovery, since more than 450,000 bison now roam the ranges or eat in feedlots in the U.S. and Canada.

Dineen stressed that the return of buffalo herds has been driven more by private ranchers and restaurateurs—like Ted Turner, who owns 70 percent of all herds in the U.S. and several steakhouses—than by the conservation efforts of federal agencies on public lands. “Most buffalo are being raised explicitly for the meat industry,” said Dineen. Since he began buffalo ranching in the earlier 1980s, he estimates the number of animals has roughly doubled, responding to consumer demand. Today, close to 5,000 farms and ranches in the U.S. raise bison for meat, in addition to those produced on tribally managed rangelands on reservations.

Although the price of ground bison meat now ranges from nine to ten dollars a pound, buffalo burgers have become a mainstay on menus from Denver, Colorado to Boston, Massachusetts; buffalo tenderloins and rib eyes are often offered as specials at high-end restaurants from coast to coast. In Denver, Colorado, the Buckhorn Exchange has been serving buffalo tenderloin as a regular menu item since 1978.

“We pioneered offering it as a menu item,” said Bill Dutton, the Buckhorn Exchange’s general
the biggest challenges early on were quality and supply. People would try buffalo and then say, ‘I’m glad I tried it but I’m never going to try it again.’ You just (let) that happen in a restaurant.”

Unlike beef, there is no USDA grading system for buffalo. As the market expanded, accountability—and quality—has risen along with it. Many processors work directly with producers, offering feedback on the size of their animals and the cuts of meat. Dutton has found that small producers often get overwhelmed by how much meat the restaurant requires, so the Buckhorn Exchange now purchases most of their meat from two processors—Castlerock Meats and Prairie Harvest.

“The perceived value of bison has increased, all the way from the chef at restaurant to the diner,” said Steve Hauff. “Because the customer is aware of the health qualities and flavor qualities, buffalo has gone up a rung or two in pricing in the last two years. People are not blinking an eye at the price of buffalo…,”

Which is a boon for new producers. “There’s only one way to incentivize producers to raise more animals and that’s through economics,” said Bob Dineen of Rocky Mountain Natural Meats.

Other barriers to entry for new producers include the high upfront cost of containment systems, as buffalo will tear through barbed wire fencing. “An upside is that bison thrive in really rugged weather conditions,” said Dineen. “They are lower management, lower input.” But because bison are wild animals that subsist mainly on foraging grasses—although some producers supplement with grain-based feed when wild forage is low—their survival and growth depend on the whims of weather.

“Drought years affect us intensely,” said Hauff. “Buffalo are 99 percent prairie-raised and prairies (have in recent years been affected by) the most intense and fastest climate change than anywhere on earth.”

This volatility in supply affects the price, which in turn affects the accessibility. The higher price of buffalo meat is a double-edged sword. Ground buffalo usually costs twice as much as ground beef.
However, premium prices means that buffalo meat may remain out of reach for many who could benefit from its healthful qualities, such as low income Native Americans confronting obesity and diabetes. Fortunately, there are many Native American groups that are working to fix that problem. Some tribal governments subsidize the cost of bringing grass-fed bison meat to their elders. Some tribal communities express both a physical and spiritual need to get buffalo back in the diets of those whose ancestors ate it almost exclusively. At a gathering in Rapid City, South Dakota, an intertribal bison cooperative was formed in 1991 “to coordinate and assist tribes in returning the buffalo to Indian country.” Today, 58 tribes across 19 states make up the InterTribal Bison Council, with a collective herd of over 15,000 bison.

Diane Amiotte-Seidl, a project director for the ITBC, is incorporating bison meat into the lunch menus of tribal schools. She works with the roughly 90 percent of tribes in ITBC that maintain buffalo herds to help them sell their meat to BIA and tribal charter schools. “They sell the buffalo meat to the schools for the price of beef. The school turns around and pays the tribe to keep their heard going,” she said. “But I’m running into a lot obstacles finding USDA-certified (slaughter) plants to process the meat,” as all meat purchased by federally funded schools must be certified by the USDA.

Outside of the schools, most tribal members encounter bison at cultural events—pow wows, tribal fairs, sundance ceremonials, and wakes, as tribal members who produce bison generously

“A heritage food is a community engager and cultural reinforcer. It binds people together with a shared sense of place, through breaking bread together over the table, or through telling stories of their past and present experiences.”

Natalie Rachel Morris, founder, Good Food Finder, coordinator, Slow Money Arizona, and graduate of University of Gastronomic Sciences, Phoenix AZ
donate their buffalo meat to these community events. The 2011 documentary Good Meat follows a 35-year-old Oglala Lakota man as he attempts to eat a traditional diet to fight obesity and diabetes. Over the course of a year, Beau LeBeau loses 100 pounds, partly by purchasing an entire bison and storing it in a frozen food locker, but by the end of the film, he admits he could not afford to purchase another bison. Where he lives, tribal members can purchase an animal from the Oglala’s herd of 300 for around $400, plus the $400 it costs to process the meat.

While bison ranching is the major means for species recovery, it has dovetailed with broader conservation efforts to restore bison to their former domain. Such efforts began in 1905 when William Hornaday and Theodore Roosevelt co-founded the American Bison Society at the Bronx Zoo. In 2005, the Wildlife Conservation Society based at the Bronx Zoo “re-launched” the American Bison Society at a conference in Denver. It brought attention to the still-endangered wild bison, diminishing native ecosystems and deteriorating Native American health. In 2012, the Society, the National Bison Association and the Intertribal Buffalo Council collectively rallied support for the National Bison Legacy Act, which would designate the bison as America’s national mammal.
THE RETURN OF THE NAVAJO-CHURRO SHEEP

Joy Vargo, with Chef John Sharpe, Connie Taylor,
Gay Chanler and Gary Paul Nabhan

As the oldest surviving breed of small livestock introduced from the Old World into the New World, the Navajo-Churro sheep population had dwindled down from over one million to just 450 individuals by the late 1970’s, and seemed destined for extinction. Alternately, the Navajo-Churro breed has not only endured but recovered to the point that their meat is now being served in unique American restaurants every day of the year.

Aided by several non-profits, this breed has moved from critically endangered to threatened status, with an estimated population of two to five thousand individuals produced on at least 50 small farms in recent years. Just how and why this traditional land race of sheep has returned to grass and sage pasturlands, and to the tables of several cultures is instructive for those who wish to recover other heritage breeds.

While it is speculated that Hernan Cortés brought Churro sheep to Mexico in 1519, it is certain that they entered what is now the United States with both Coronado and Oñate in the early 16th century. In New Mexico, in particular, their flocks flourished so well among Spanish-speaking colonists and
Pueblo Indians that Navajo raiders began to capture them and establish their own flocks. Essentially, the sheep soon became central to the creation stories of the Diné (Navajo) and cherished in the material culture of Hopi, Zuni and Hispanic herders in the Four Corners region. Tragically, Navajo-Churro flocks were nearly decimated twice over the last century and a half; regardless, the Churro were still esteemed by Hispanic and Navajo herders and weavers who did not let the memory of this distinctive breed disappear from their oral histories or their livelihood.

When the livestock research program at Fort Wingate, NM closed in 1965 the last known 800 ewes and 20 rams of the breed were sold off all over the west and most were killed and eaten. Fortunately, within a just a few years of that catastrophe two talented observers of livestock—wool producer Ingrid Painter and livestock scientist Dr. Lyle McNeal—discovered the remnants of those flocks and recognized their uniqueness. Ingrid began to raise them to share with other wool producers. Lyle and his wife Nancy established the Navajo Sheep Project to research their distinctive characteristics, genetically restore the quality of the breed’s remaining sheep, and return them to the Navajo people. Around 1977 Dr. McNeal also linked the Navajo Sheep Project’s efforts to the recently founded American Minor Breeds Conservancy, which offered technical assistance on the conservation breeding of endangered populations.

As the McNeals brought the traditional genetics of the breed back into order, 17 Navajo weavers took advantage of the renewed availability of Navajo-Churro wool and meat forming a non-profit called Diné Be’iiiná, which began to host annual Sheep is Life gatherings on Navajo Nationlands. When similar efforts developed among Hispanic weavers near Tierra Amarilla and on the Zuni Indian reservation these groups decided to join forces collectively forming the Navajo-
Churro Sheep Registry, which has been diligently maintained since 1986 by producer-weaver Connie Taylor. The registry developed into the Navajo-Churro Sheep Association which now sponsors the breed registry, maintains cross-cultural relations among herders and breeders, and reminds the public of the shared Native American and Hispanic legacies associated with this breed. Hispanic producer Antonio Manzanares and Navajo leader Milton Bluehouse were elected as the first Co-Presidents of this Association. Through its work the number of trained breeders offering Navajo-Churro sheep to producers has grown from a handful of participants in the 1980s, to 48 breeders in 2001, and about 80 registered breeders in 2013.

Commercial marketing of Navajo-Churro lamb to Chefs began through the work of Maria Varela, Antonio and Molly Manzanares and others within the community micro-enterprises associated with Las Ganados del Valle: Los Pastores Lamb, Tierra Wools, and Cerro Mojino Woolworks in Los Ojitos, New Mexico. Chef Mark Miller’s Coyote Café in Santa Fe, NM and Angelina’s Restaurant in Espanola, NM were among the first in the Culinary Arts to recognize the epicurean qualities of Churro lamb, and ordered as many as 200 animals a year in the 1990s. The engagement of these respected restaurants triggered media attention for the breed and stimulated similar efforts elsewhere to further engage Chefs with supporting Navajo-Churro sheep producers. As a result, Churro Lamb was served at Slow Food USA’s first national leaders gathering at Shelburne Farms near Burlington Vermont.
Prior to the Renewing America’s Food Traditions Alliance working to board the breed on Ark of Taste in 2003, culinary interest in the Navajo-Churro breed was not necessarily helping many Navajo or Hispanic herders improve their livelihoods. And so the Navajo-Churro Sheep Presidium was established in 2006, in part to assure that traditional or indigenous shepherders could be the primary beneficiaries of the growing market interest in the breed. Presidium-affiliated Navajo shepherders have now worked up spreadsheets to guide their market pricing and they regularly participate in international events, such as Terra Madre in Italy and the World Gathering of Nomads and Transhumant Herders in Spain, to learn how other shepherders are gaining live-able wages.

Chef Gay Chanler, coordinator of the Presidium, has marketed the meat in northern Arizona through CSAs, Slow Food chapters and special events. To her palate, “Navajo-Churro lambs and young ewes produce a sweet, lean meat that is particularly healthful and offers a very authentic flavor reflecting the herbs and forage of the region.” Furthermore, Lyle McNeal’s research indicates that these animals naturally concentrate their fat storage around their internal organs so that there is practically no fat marbling in the meat whatsoever. According to Chef John Sharpe of the Turquoise Room at La Posada in Winslow, Arizona, “this unique attribute gives the Churro the cleanest, most remarkable flavor of any other lamb”. Sharpe utilizes over 100 animals per year in snout-to-tail processing in his historic hotel restaurant, and helps distribute another 30 to 40 per year to other restaurants.

Nowadays registered Navajo-Churro sheep are being raised for market in at least 19 states, engaging over 40 producers listed on localharvest.org alone. The number of registered Navajo-Churro breeders has remained fairly stable since 2003 but new recruits, especially among the Diné themselves, are needed. As Connie Taylor, the Breed Registrar of the Navajo-Churro Sheep Association, has noted “One thing that could really help now is an effort to assist breeders who need feed (because of the scarcity of hay after recent droughts and wildfires in the West) and to assist older breeders who need to place their flocks with younger breeders.” A new generation needs to be mobilized to carry on the further recovery of America’s oldest sheep breed.

“This (regionally sourcing heritage foods) has been a major paradigm shift in the sociological interactions and development of chefs. Today, many of us are asking, ‘How do we focus our work, how do we operate within our community, how do we source our materials and how does that play into the creative side of what we do?’ Now all I do is see what the immediate universe brings me on a particular day. These unique materials are what give me my inspiration.”  Chef John Sharpe, co-owner of the Turquoise Room at La Posada, Winslow AZ
THE PREVIOUS sections suggest that over the last quarter century, the recovery of heritage food biodiversity has been one of the most cost-effective investments that private citizens, communities, philanthropic foundations, non-profit organizations and grassroots alliances have made in collaborative conservation over the last century. But despite recent successes, there are many emerging challenges, obstacles and threats that must still be dealt with. Among them are:

A. Climate change and the displacement or destruction of rare crop and livestock populations after catastrophic weather events.

B. Expanding distributions for pests, toxic weeds and diseases that may affect the health of rare plant or animal populations.

C. Potential genetic contamination by GMOs of heritage varieties of corn, rice or other crops.

D. Loss of pollinators required to assure seed and fruit set of rare food plants.

E. “Green washing” in the commodity marketplace, hoping to capitalize on the buzz associated with heritage foods or heirloom vegetables.

F. Unethical cultural appropriation, patenting or trade-marking of heritage foods that potentially disrupts the food sovereignty of indigenous communities, or of immigrant communities of traditional farmers.

G. Unintended effects of food safety and zoning regulations limiting the production of heritage plants and animals which local artisans prepare into value-added products.

H. Scarcity of trained livestock breeders or backyard/on-farm plant breeders required to keep heritage plants and animal populations dynamic, rather than having them relegated to the status of static museum pieces.
I. Scarcity of small- and medium-scale processing facilities, particularly for livestock, to allow artisanal fabrication, and curing of heritage foods.

J. Scarcity of training programs to recruit more young nurserymen for tree grafting and more horticulturists for seed increases of rare varieties.

“When I was a little girl, my great-grandmother would ask me to finish my meal by saying, ‘Poppy, eat it to save it.’ Or the last decade, that request has resonated as a battle cry in my food preservation and recovery work. But since the disaster... I’ve wondered, is this “Eat It To Remember It?”

Poppy Tooker, food historian, founder, Slow Food New Orleans, former Slow Food Ark of Taste International Committee member and radio personality, New Orleans LA

“Rosie the Riveter” - Rebecca Newburn
AT THE SAME TIME, there are many challenges facing the conservation of agricultural biodiversity and the market recovery of heritage foods, there are many best practices embedded in the case studies presented here that could potentially help other heritage foods to be recovered:

1. Most successful heritage food recovery efforts have required a collaborative conservation mentality to recognize that it may “take a village” of heterogeneous participants—farmers, breeders, marketers, chefs, etc of all political persuasions and ethnic or racial backgrounds—to help recover a variety, species or food tradition. Collaborative rather than command-and-control behaviors will likely work best over the long haul.

2. Many heritage food recovery efforts simply start with confidence-building between farmers and chefs who share common values; the building of cross-sectoral relationships and lasting friendships matter perhaps more than any other social factor in assuring success.

3. Newly recruited chefs or consumers are ultimately attracted to a heritage food by its flavor, color, texture or shape, and how the person resonates with its story. People are not only willing to pay for the caloric value of these foods; they are willing to pay for the cultural and ecological value of them. Tell the rich back story of the food, its related foodways, and its producers.

4. Focus on means to make the food not only accessible but affordable. Heritage food promoters should not shirk from finding innovative means to reintroduce these foods to low income consumers who need to purchase them at just prices. For instance, Wholesome Wave’s double-the-value program for SNAP program recipients can be used to purchase seeds, seedlings or cuttings of food plants at farmers markets. If low income families are most nutritionally at risk, it may be
“Taste is the key to unlocking curiosity about these foods. You taste something different and ask “why?” Then, anyone can get excited about answering that question.: chefs, horticulturists, farmers, family elders, anthropologists, social justice activists and many others. They will all find a different answer in the stories of these heritage foods.”

Megan Larmer, Slow Food USA Manager of Biodiversity Programs, Chicago IL
more cost-effective to subsidize their access to these foods rather than pay rising health costs later as a result of the absence of such foods in the diet.

5. Citizen scientists can be organized at the neighborhood, community or regional scale can help to observe the conditions under which these heritage foods grow best; we need to build a community of “amateur experts”: who exchange their insights regarding how to best propagate, breed, manage, harvest, process, store and utilize these foods.

6. As the recovery and production of a heritage food ramps up, it will be important for a community to plan and invest in milling or processing facilities, storage facilities and food distribution hubs that allow these foods to move through short but efficient supply chains.

7. It is critical to seek out mentors, specialists and technicians who have helped recover similar heritage foods so that we do not reinvent the wheel each time. They can help you develop a grow-out toolkit as Chefs Collaborative did following its 2009 and 2010 grow-outs in New England that guided farmers, gardeners in how to best meet the horticultural needs of rare heritage plants and to form partnerships with chefs and farmers markets necessary to bring these varieties to the marketplace.

8. It is also worthwhile to develop tasting protocols as American Livestock Conservancy and the Slow Food Ark of Taste Committee have done to provide a vocabulary for describing, evaluating and ranking a foodstuff’s flavors, fragrances and textures, and for exploring its best culinary uses.

9. While avoiding price fixing of any kind, it is important for producers, processors and chefs to share data on the true cost of producing, marketing and using a heritage food in scarce supply, and to collectively come to an agreement about an acceptable price range. It is also critical to understand that as supply and demand change through time, that the collective spreadsheet will undoubtedly need reworked.
10. Finally, each heritage food may have embedded within its history multiple stories which appeal to different kinds of people at different times in the food’s recovery. Match the most appropriate story up with the particular person and the moment, so that the person is truly inspired to become engaged in furthering the recovery of the food itself and its associated foodways.

“True food justice can’t be realized in America if each of the many native and immigrant cultures residing here do not have access to and sovereignty over its heritage foods. These foods are not only good to taste; because of many of them have co-evolved with cultural communities, they are good for our physical, emotional, social and spiritual health.”

Gary Paul Nabhan, orchard-keeper and founder, Renewing America’s Food Traditions, Patagonia AZ
THE CONTRIBUTORS

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“Our communities have always been rich in spirit and rich in song...These communities harbor homegrown experts on sustainable land use who are transmitters of local knowledge and traditions that have amassed over hundreds and thousands of years—traditions now in danger of being lost in a matter of decades. Volumes of undocumented knowledge are now in danger of slipping through our hands—from fishing and hunting craft, to medicinal and culinary uses of local plants, to farming techniques.”

Louis Michot, fiddler and lead singer for the Grammy-nominated Lost Bayou Ramblers and folklorist with the Cultural Research Institute of Acadiana, Prairie des Femmes LA