

Living With Nature: Cooking for Biodiversity



The Center for Biodiversity and Conservation

Since the founding of the American Museum of Natural History in 1869, the study of *biodiversity* — the variety of life in all of its forms and the interactions among them — has been one of its fundamental activities. In response to growing concern over the rapid loss of life forms and natural areas around the world, the Museum established the Center for Biodiversity and Conservation (CBC) in 1993. The CBC brings the Museum's extensive scientific and educational resources to bear on conservation decisions and actions. Its programs and activities integrate scientific research, education, and outreach, so that people — themselves major catalysts in the rapid loss of biodiversity — will become participants in its conservation.

For more information, please visit <http://cbc.amnh.org>

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Amaranth

4-5



Squashes and Pumpkins

6-7



Beach Plum

8-9



Artisanal Sheep's Milk Cheese

10-11



Heritage Turkey

12-13

We are fortunate that nowadays we have an abundance of foods available to us throughout the year. Indeed, seasons and regions no longer limit our choices, as a glance at grocery displays and restaurant menu offerings shows. But how does the availability of once-seasonal produce and foods from the farthest reaches of the planet impact our experience of foods, their nutritional value, and the environment? More and more, people are beginning to ask questions about where their food comes from, how it affects their well-being and the well-being of their community, and how it links to nature and biodiversity.

Inspired by the Center for Biodiversity and Conservation's October 2004 program "Living With Nature: Healthy Eating for You and the Planet," this recipe booklet is our ode to a diet that's flavorful, seasonally inspired, diverse, and healthy. While the recipes we present may contain some unfamiliar ingredients, we invite you to experiment and welcome new foods into your dining and cooking repertoire. Note that these represent just a sampling of the many different grains and plants that are grown locally — a starting point for discovery.

In the last half century, the variety of grains, vegetables, and fruits grown in the United States has dwindled to a narrow selection best suited for commercial production and marketing — those with higher yields, long-distance durability, longer shelf life, and standardized size and color. This transition has resulted in an estimated loss of approximately 75 percent of the genetic diversity among agricultural crops. The disappearance of diverse cultivars has meant not just a loss of unique flavors and textures, but also a precipitous drop in genetic variability. Species that encompass a wide range of genetic traits are better able to withstand threats posed by disease, pests, and environmental conditions, and our increased reliance on a handful of crops grown in uniform "monocultures" means we are also reliant on a dangerously limited agricultural gene pool.

This loss of diversity ripples far beyond the homogeneity of farm fields. It also affects the variety of animals able to live on and around farmland, including birds, insects, small mammals and others that provide invaluable services. For example, scientists estimate that pollination by insects, especially bees, is worth billions of dollars to the U.S. economy each year. Soil insects and other organisms enrich and fertilize the land. Areas lacking these natural populations are often reliant on massive amounts of chemical pesticides and fertilizers. The good news is that increased interest in more sustainable agriculture methods has led a growing number of farmers to incorporate a greater variety of crops, use few or no chemicals, and preserve natural habitat, thus supporting healthy populations of pollinators, predator species that act as natural pesticides, and other benefits from biodiversity.

By seeking out seasonally available and locally grown foods, asking informed questions about farming methods, and considering the resources involved in bringing the foods we buy to market, we help restore and retain healthy ecosystems and strengthen local economies. We have a wealth of opportunities to meet growers and local food distributors — through farmers' markets, community-supported agriculture programs (CSAs), food co-ops, farm stands, and pick-your-own orchards. Get to know the people who produce and sell the foods you eat. In grocery stores, too, it's important to ask questions and look for locally produced foods. In the process of seeking out the bounty of foods available from local sources, we reap the benefits of a more diverse diet full of fresh foods, intense flavors, and healthful choices. Whether it's a native fruit, such as beach plum, a New York-bred heritage turkey, an heirloom variety of fruit or vegetable, or a different type of grain, your food choices can promote healthier people and a healthier planet.

Eleanor J. Sterling, Ph.D.
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Amaranth



Despite the great diversity of edible plants in the world, just three grains currently constitute our dietary staples — corn, rice, and wheat. However, many other grains or grain-like seeds are available, including amaranth, barley, kamut, quinoa, and spelt.

While its English name comes from the Greek for “everlasting flower,” amaranth was first domesticated in Central America over six thousand years ago. It was an important food crop for both Mexico’s Aztecs, who considered it sacred, and the Inkas of Peru. Its production declined in the early 1500s after Spanish conquerors discouraged rituals and objects associated with Aztec culture and religion. As its prominence fell in Central America, its use spread through Europe and into Asia and Africa. Its popularity in the U.S. has grown in recent years.

Related to beets and spinach, amaranth is a tall, broad-leaved, bushy plant with showy, feathery plumes for flowers, and seed heads resembling corn tassels. Amaranth is a versatile food source. The young, tender leaves can be prepared as you would collard greens or spinach. Each amaranth plant also produces 40,000 to 60,000 tiny seeds that can be cooked as cereal, ground into flour, popped like popcorn, sprouted, toasted, or combined with grains. In Mexico, amaranth is popped and mixed with sugar to make a dessert called “alegría” (“happiness”). In India, a similar dessert is known as “laddoos.” In Peru, amaranth seeds are fermented to make a beer, known as “chicha.”

The vitamin-packed amaranth seed is higher in protein than beans, has more fiber than wheat or soybeans, and is exceptionally rich in the amino acid lysine (rare in the plant world). Amaranth also contains more calcium and magnesium than milk and four times the iron of brown rice. Because of its high nutritional value, amaranth is being used to combat malnutrition in many parts of the world.

Amazing Amaranth Wafers

Adapted from Mollie Katzen’s Sunlight Café

Preparation time: 25 minutes

Yield: A dozen wafers (about 3 servings)

Crunchy on the outside (as though coated with infinitesimal popcorn) and creamy on the inside, these little cakes are made purely from cooked amaranth. Take a few to work with you for a terrific portable breakfast or midmorning snack. They don’t lose their texture as they cool — or even after being stored — and they taste delicious at any temperature. You can eat them plain, with just a little salt, or drizzle them with syrup. They also go well with savory condiments.

- > High-oleic safflower oil can be heated safely to a very high temperature, which makes the wafers really crisp. If you don’t have this kind of oil on hand, you can sauté the wafers in canola oil at a lower temperature. They’ll still be good, although not as crisp.
- > Store Amaranth Wafers for up to a week in a tightly covered container in the refrigerator, and reheat in a toaster oven, or in a hot frying pan that has been sprayed lightly with nonstick spray. They will virtually spring back to life when reheated!

1 cup cooked amaranth, cooled (recipe follows)

High-oleic safflower
oil for frying

Salt to taste

Optional Toppings

Pure maple syrup

Salsa

Chipotle Cream
(sour cream with a little
chipotle chile paste
mixed in)

Scoop up the cooked amaranth, about 1 1/2 table-
spoons at a time, and form it into small (2-inch
diameter) wafer-like disks with your hands. (It’s easiest
to do this if you wet your palms.)

Place a skillet over medium heat for about 2 minutes.
Add enough oil to cover the bottom of the pan in a
thin layer, and wait about 20 seconds for the oil to get
hot. Add the wafers, and fry for about 10 minutes
(possibly longer) until brown and crisp. Turn and
repeat on the other side. Transfer to a plate lined
with paper towels, and cool for a few minutes.
Sprinkle lightly with salt.

Serve hot or warm, with the toppings of your choice.

Plain Cooked Amaranth

Yield: 2 cups

1 cup amaranth seeds
1 3/4 cups water

Combine the amaranth and water in a saucepan and
bring to a boil. Lower the heat to a simmer, cover
the pan, and cook for 25 minutes. It will become a
glutinous porridge.

Squashes and Pumpkins

Native to North and South America, squashes are members of the gourd family (Cucurbitaceae), which also includes cucumbers and melons. A staple in the Americas for thousands of years, squash was likely first cultivated for its seeds rather than for its fleshy interior. The word “squash” is derived from the Algonquin word “askuítasquash” which translates as “eaten green or raw.”

Squashes grow in an amazing diversity of shapes, colors, sizes, textures, and tastes; the largest squash on record weighed 1,000 pounds. Summer squashes (such as zucchini) are harvested while still immature; winter varieties remain on the vine until the rind hardens. This hard exterior allows the squashes to be stored for up to six months, or through the winter (hence their name). Most squashes belong to four species (*Cucurbita pepo*, *Cucurbita maxima*, *Cucurbita moschata*, and *Cucurbita argyrosperma*).

There are literally hundreds of heirloom squash species — too many to list here. However, today few can be found in your local supermarket, where they have been largely replaced by smaller, easily shipped varieties. Fortunately, a number of heirloom squash varieties can still be found at many local farmers markets.

Winter Squash

Principal season: October-November

Nutritional value: Excellent source of vitamin A (in the form of beta-carotene).

Very good source of dietary fiber, vitamin C, potassium, vitamins B1 and B5, and folate.

Summer Squash

Principal season: May-June

Nutritional value: Excellent source of magnesium. Very good source of dietary fiber, vitamin A, and vitamin C.

Winter Squash varieties

Hubbard squash (*Cucurbita maxima*) is a large variety, weighing about 20 pounds, with a thick gray-green or orange rind and a very sweet orange flesh. It can be baked, mashed, or made into soups. It also makes excellent pie, similar to pumpkin, but needing less added sugar. It's an especially nutritious squash with very high quantities of beta-carotene. The first “Hubbard” seeds were apparently brought to New England by a sea captain in 1798, from either the



West Indies or South America. Over the next half century, gardeners continued to propagate the seeds and, around 1842, Mrs. Elizabeth Hubbard (a Marblehead, Massachusetts gardener) gave some of the seeds she had collected to a salesman. It became famous for its sweet, rich flavor.

Cheese pumpkin (*Cucurbita moschata*) is a large, tan pumpkin that vaguely resembles a wheel of cheese. Unlike most winter squashes, this one doesn't store particularly well. Traditionally, these pumpkins were made into a thick paste or “pumpkin butter.”

Buttercup squash (*Cucurbita maxima*) is a dark green, turban-shaped squash with grayish stripes. The flesh is orange and its taste similar to that of a sweet potato.

Some other winter squash varieties: Acorn, Banana, Butternut, Delicata, Golden Acorn, Golden Nugget, Pumpkin, Sweet Dumpling, Spaghetti, Turban.

Roasted Maple-Glazed Golden Acorn* Squash Rings with Apples and Pecans

Mollie Katzen

2 large golden acorn squash (about 1/2 pounds each), sliced into rings 1/2 inch thick—seeds removed
4 tablespoons (half a stick) butter
3 tablespoons pure maple syrup
1 large Granny Smith apple, sliced thin
1/2 cup chopped, toasted pecans

Preheat oven to 400°. Line a baking pan with foil, then spray the foil with nonstick spray.

Arrange the squash rings on baking pan, and roast in the center of the oven for 15 minutes. Remove the tray from the oven, and reduce the heat to 350°F.

Meanwhile, melt the butter in a medium-sized saucepan. Add the maple syrup, bring butter to a boil, then remove from heat. Brush this mixture on the squash rings, then distribute the apples on top. Return the tray to the oven for another 10 to 15 minutes, or until the squash is fork-tender.

Serve topped with chopped, toasted pecans.

Yield: About 6 Servings

*Note that the acorn squash can be substituted for any hard-skinned variety.

Beach Plum



Beach plums (*Prunus maritime*) are native to Eastern coastal dunes from Massachusetts to North Carolina, and are one of about two dozen plum species native to North America. Like all plum species, they are cousins to a number of other fruits including almonds, apricots, cherries, and peaches. Of the thousands of varieties of plums, currently only about 20 are grown commercially, generally categorized as either European or Asian based on their size, with the European ones being smaller. Giovanni da Verrazano, a European explorer, mentioned them in his journals after visiting southern New York State in 1524, as did Henry Hudson in his 1609 observations of the plentiful beach plums found at the mouth of what is now the Hudson River. The fruit was regularly collected and eaten by Native Americans and early European settlers.

The plant ranges in size and appearance from a scrubby bush to a small tree and, as its name suggests, it tolerates the sandy, windy conditions found in coastal areas. Beach plum fruits range in color from yellow to a deep bluish purple with a dusting of white. They can be quite variable in taste even when picked from the same tree — from very bitter to juicy and sweet. The plums can be eaten raw, and are also commonly made into jams or jellies. Like other stone fruit, beach plums do not ripen once they are picked, but instead soften; while their sugar content increases, they never develop the same sweetness and aroma as fruit that has ripened on the bush.

Beach plum is a signature flavor for jam in Cape Cod, where the beach plum industry flourished from the 1940s to 1960s. The Cornell Agriculture Extension has recently spurred a revival of interest in beach plums. Working with growers in the Northeast, they are experimenting with commercial production methods as well as developing new markets and products from the fruit, such as ice cream. Beach plums are harvested in late summer and fall.

Beach Plum Jelly

Adapted from The Joy of Cooking

Add one pound washed, ripe fruit to a large pot. The fruit can be crushed or pricked with a fork. Add enough water to just cover the fruit, but the fruit should not float (approximately 8 cups of water).

Cook over a low heat and then bring to a moderate boil for 15 to 20 minutes, until the fruit is soft and losing its color.

Strain through one thickness of cheesecloth or a jelly bag. Moisten the cheesecloth or bag first with water.

Return the strained pulp to the pot, add another 8 cups of water, and boil for about 10 minutes. Skim off any froth that forms.

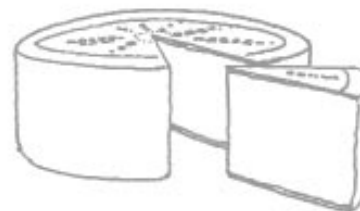
Strain again and save the juice. Mix the pulp and the juice, and concentrate by passing through four thicknesses of cheesecloth. Then add 6 cups of sugar and 2.7 grams or 2 ounces of pectin, and bring to a boil again. The mixture should boil between 10 and 20 minutes. The mixture should thicken and is ready once it is thick enough so that two large drops forming on the back of a spoon meld or gel into one. Pour the mixture into sterilized glass containers. Yield is about 18 ounces of jelly for every pound of fruit.

Artisanal Sheep's Milk Cheese

Historically, wild sheep have ranged across many regions of the world, from southern Europe, across Asia, through Siberia to North America, although today they have disappeared from many of these areas. The domestication of sheep is thought to have begun around 8,000 B.C. and their remains (insofar as they can be distinguished from goats, their close relatives) account for a high percentage of bones at many archeological sites dating back to about 5,000 years ago. The integration of sheep into human's lives was a historic event that strongly influenced many cultures, particularly with the introduction of weaving and manufacturing wool for clothing.

Using sheep's milk to make artisanal cheeses is a centuries-old practice in Mediterranean regions that has in recent years gained popularity in the United States. Artisanal cheeses are made primarily by hand, in smaller quantities than large-scale commercial cheeses, and particular attention is paid to cheese-making traditions. Some of the more well-known sheep's milk cheeses that are being made artisanally include roquefort, manchego, and pecorino romano. Sheep's milk is dense, containing about twice the fat and twice the solids of cow's milk, and has a high protein content. Some family farms here in the Northeast have begun integrating sheep into their operations to contribute to the farm's economics — in addition to income from products such as milk or cheese, sheep waste is highly valued for its use as fertilizer because it has twice the nitrogen and potassium of cow manure.

While sheep, goats, and cattle can certainly have an adverse impact on biodiversity when raised at large scales or when introduced into fragile environments, it is possible to raise them sustainably. Ask your grocer or farmer where and how the cheese



was produced.

Artisanal sheep's milk cheese is delicious on crackers or crudités as an appetizer, in omelets, and in many other recipes. Tod Murphy, founder of the Farmers Diner in Vermont, also runs a sheep dairy, and says that his favorite accompaniment to sheep's milk cheese is "a hunk of bread and a bottle of beer." Cookbook author Mollie Katzen recommends serving pecorino with either honey or an earthy-flavored mushroom. Below is a favorite offering from the Old Chatham Shepherding Company, Old Chatham, New York.

Feta Cheese Crepes

- 1 cup feta cheese
- 1 cup fresh sheep cheese
- 2 eggs
- 1 tablespoon dried oregano
- 1 tablespoon fresh dill, chopped
- 1 clove garlic, minced
- 1/4 tablespoon sun dried tomatoes
- 3 tablespoons olive oil
- 8 prepared crepes

In a medium-sized bowl, blend together all ingredients, except oil and crepes. Mix thoroughly. In a large skillet, heat oil over medium heat. Lay out crepes and place 2 to 4 tablespoons of feta mixture on the crepe. Fold the crepe in half. Fry in skillet, continuously turning until soft (about 2 minutes).

Heritage Turkey



Native to North and Central America, the wild turkey (*Meleagris gallopavo*), was almost certainly already domesticated in Mexico when the Spaniards first arrived. The ancient Mayas believed that the turkey symbolized the south, and Mayas today still forecast the weather by observing turkey behavior. Farther north, archaeological evidence of turkey callers fashioned from turkey wing bones indicate that people in North America had developed fairly elaborate turkey-calling skills by at least 4,000 years ago.

In the United States, the turkey's place in history predates its now ubiquitous association with Thanksgiving. Founding Father Benjamin Franklin lamented the selection of the bald eagle as the national bird, saying in a letter to his daughter that, "The turkey is a much more respectable bird, and withal a true original native of America." There are a number of theories about how the turkey got its name. In one story, Christopher Columbus named the birds *tuka* (the Tamil word for peacock) because he believed he had arrived at a land connected to India, where peacocks are numerous.

The breeds that dominated early turkey markets here in the Northeast (such as the Narragansett) are thought to have descended from hybrids of eastern wild turkeys (*M. g. silvestris*) and domesticated birds that had been brought from America to Europe by the Spaniards and then back to North America by the Dutch and British. The turkey varieties originally cultivated in the United States have become extremely rare, and many are on the verge of extinction. The Large White, or Broad Breasted White — a single strain bred to have ample white meat — has usurped them, and now accounts for most of the approximately 270 million turkeys consumed annually in this country. Having the bulk of the nation's turkey supply reliant on this one variety means that there is less genetic variation within the population to combat a possible disease. These highly bred turkeys are very susceptible to disease and are often given large doses of antibiotics to ward off infection.

The older, hardier varieties, such as Bourbon Red, Bronze, and Narragansett — collectively known as "heritage" turkeys — can live outdoors, eat a varied diet, and produce meat that is rich and flavorful. Many farmers and organizations are now working to increase the popularity of the heritage turkey breeds. If you usually celebrate Thanksgiving with a turkey, this holiday offers an excellent opportunity to support farmers who breed heritage varieties; it is estimated that some 46 million turkeys are eaten on this day alone.

Because heritage turkeys are quite different from the conventional types, they should be cooked differently as well. You can ask at your farmers market for someone who sells heritage turkeys, and talk to them about how to cook it. Heritage turkeys are generally smaller than the commercial variety, so fast cooking at a high temperature is a better method than slow roasting. The organization Local Harvest recommends that heritage turkeys be cooked at 425-450 degrees F until the internal temperature reaches 140-150 degrees F. Butter or oil can be added under the breast skin to add flavor and moisture during roasting. Following is a special recipe from Dan Barber, chef/owner of Blue Hill at Stone Barns and Creative Director of Stone Barns Center for Food and Agriculture.

For sources of heritage turkeys see the Slow Food website: www.slowfoodusa.org.

Brined, Roasted and Baked Heritage Turkey with Its Own "Gravy"

Dan Barber

For the cure:

1 1/2 cups kosher salt
1/2 cup +
3 tablespoons sugar
2 bay leaves
2 sprigs of thyme
7 cloves
1/2 tablespoons whole
allspice berries, cracked
1/2 teaspoon
juniper berries
1 14 lb. turkey
1/2 lb. butter, softened
salt and pepper

In a large stockpot add two gallons of water and all the spices. Bring to a simmer and remove from the stove. Cool liquid completely. Add turkey, breast side down and refrigerate over night.

Pre heat oven to 475 degrees. Drain the next morning and let turkey come to room temperature. Carefully separate skin from the breast meat and rub softened butter on to breast. Season liberally with salt and pepper.

Set the turkey, breast side up, on a rack of a large roasting pan. Tie the legs together with kitchen string.

Roast for 20 minutes. Lower the oven temperature to 350 degrees and cover turkey loosely with tin foil. Roast for about 3 1/2 hours, or until the thermometer inserted into the inner thigh registers 150 degrees.

Transfer turkey to cutting board. Let stand for at least 45 minutes to cool down.

Remove legs and thighs, being careful to not take too much skin with you. Place thighs, skin side, on a roasting pan and continue cooking, 40-45 minutes or until juices run clear.

Separately slice breast and thigh and plate while still warm.

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