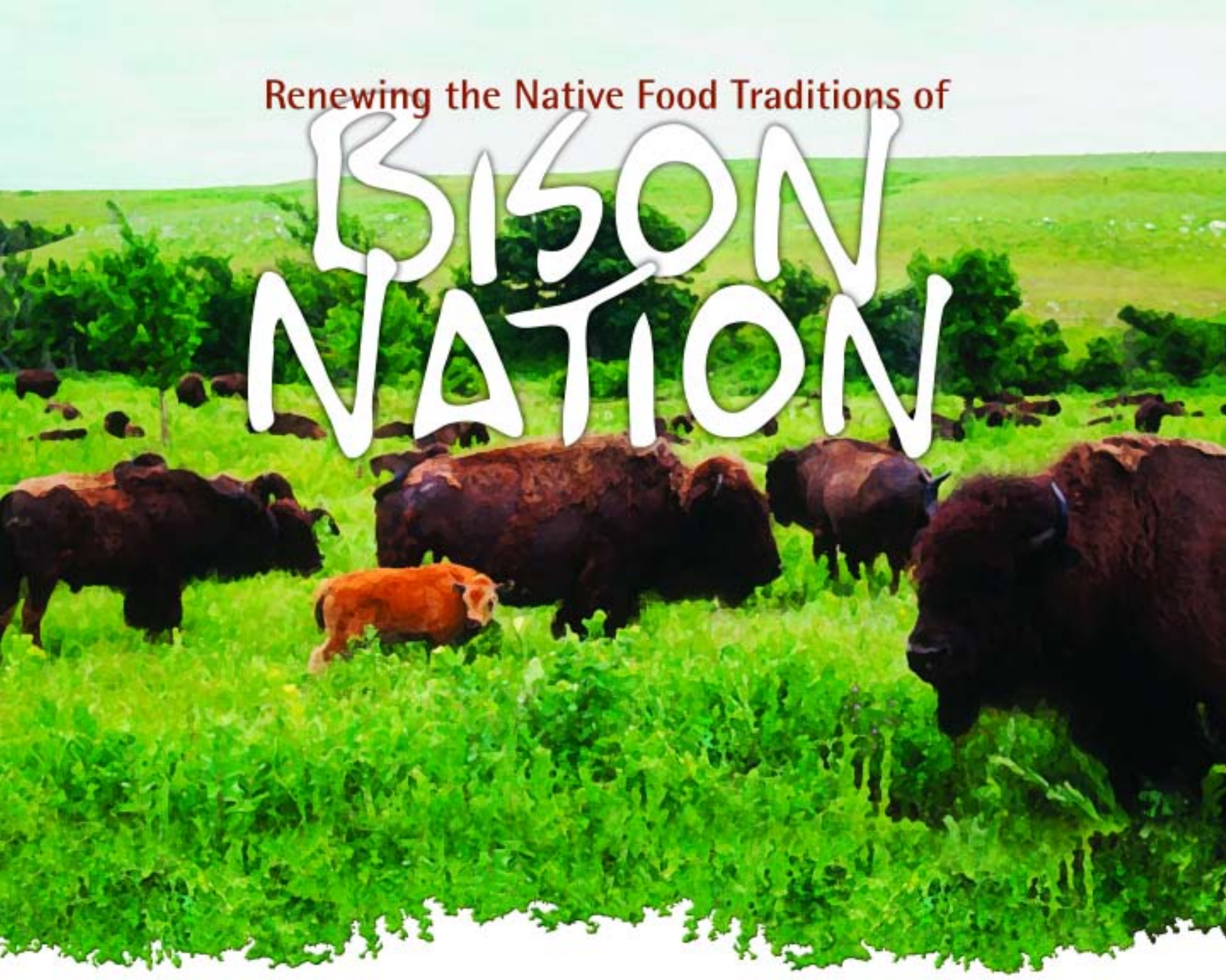
Renewing the Native Food Traditions of

BISON NATION



A Manifesto by Gary Nabhan and Kelly Kindscher

on behalf of the Renewing America's Food Traditions (RAFT) Consortium, 2006

The buffalo are diminishing fast. The antelope that were plenty a few years ago, they are now thin. When they shall die, we shall be hungry.

—Tonkahask (Tall Bull)

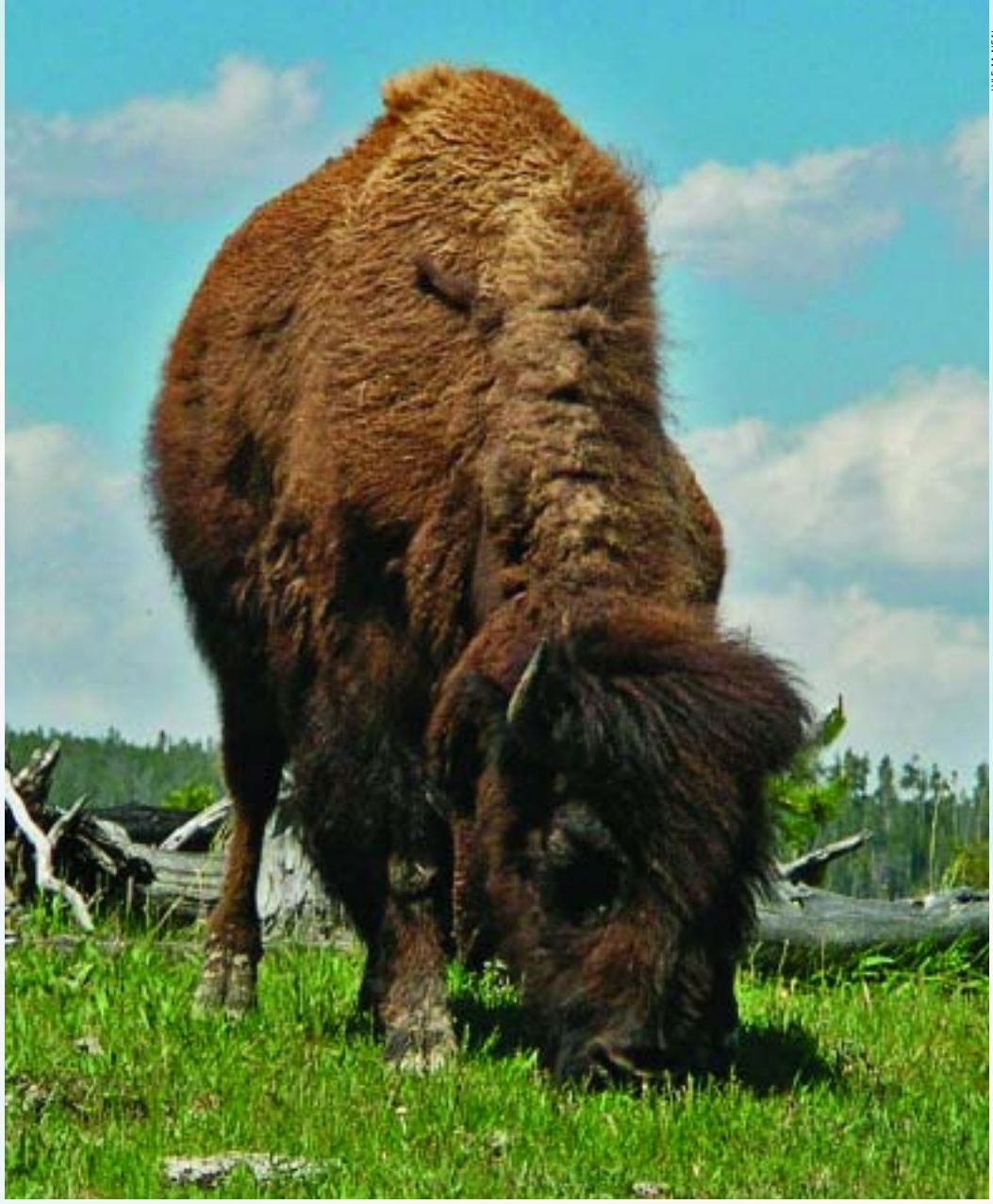
TRY TO IMAGINE the former abundance of game and diversity of plant life that were once part and parcel of the plains and prairies comprising the honey-colored heartland of North America. Today, when much of the best soil in America produces only genetically-engineered annual crops of corn or soybeans, nitrate pollution in our streams, and dead zones in the Gulf of Mexico, it may be hard to fathom the simple fact that much of that land had fed its human habitants for thousands of years while staying under the perennial cover of grasses and herbs. We affirm that it would better nourish our bodies and nurture our souls if it were returned to perennial cover, and given over to bison and their ecological associates once again.

In recent years, conservation scientists and activists have proposed that large tracts of the Great Plains be restored to high-intensity grazing by free-ranging bison herds. Among the cultural and economic benefits of such restoration would be the renewal of native food traditions among the residents of Bison Nation. If successful, the return of free-ranging bison would not merely produce grass-fed buffalo meat for human consumption on a larger scale, but would also increase access to a number of other regionally unique foods to improve nutrition and reduce diabetes among residents. Let us imagine how this might happen.

[When the buffalo passed] I did not know then how much was ended...the nation's hoop is broken, scattered. There is no center any longer and the sacred tree is dead.

—Hehaka Sapa (Nicholas Black Elk)

LYLE McNEAL



LYLE McNEAL

The reintroduction of bison to a more extensive area of short-grass plains, tall-grass prairies, and adjacent savannas will no doubt enhance the spatio-temporal variation of plant cover, and biodiversity as a whole. In particular, it should promote a greater heterogeneity of microhabitats such as buffalo wallows. This in turn may increase the productivity and diversity of edible plants and small game available as foods to the cultural communities residing in Bison Nation.

For most of the last ten thousand years, the plains bison has served as the keystone species for the heartland of North America. They have modified both large landscapes and microhabitats through differential grazing, especially in areas recently-burned by wildfires; by wallowing; by tree-rubbing and pruning the branches of woody species; and by their deposition of seed-laden, nitrogen-rich feces and urine across large landscapes. The interaction of their grazing and movement patterns with fire, flood, and drought historically set up a patch dynamics that favored greater plant diversity among sites.

Their direct physical influence on plant distribution and cover, soil fertility, water retention and filtration has not been insignificant, according to environmental engineer Alice Outwater. Each individual bison may have annually used dozens of buffalo wallows every year, disturbing the plant cover of each 3 to 4 meter diameter area by grubbing out depressions as much as a third of a meter in depth. When millions of bison were utilizing the grassland, savanna, and woodland habitats of Bison Nation, the resulting wallows numbered in the hundreds of millions, and radically shaped the hydrological dynamics of their watersheds.

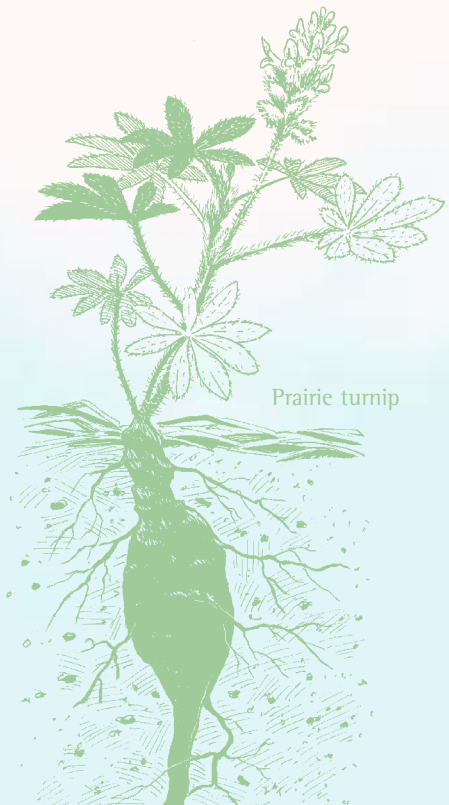
This created suitable habitat for many annual and perennial flowering plants, anuran lizards, and land birds, some of which favored muddy wallows while others favored sandy or dusty ones. While not all the species growing in wallows were historically used as food by humans, it is clear that certain edible plants were indeed more abundant when there was a patch dynamics fostered by bison than there are now on lands managed for beef, wheat, corn, or soybean production.

The following annotated list highlights certain food traditions of Bison Nation that could be restored concomitant with the restoration of free-ranging bison to large tracts of the short-grass plains and tall-grass prairies. In each section, they are listed roughly in order of historic importance, with the most culturally significant traditions listed first. The Renewing America's Food Traditions (RAFT) consortium offers this preliminary list to encourage more collaboration among conservation biologists, restoration ecologists, the Intertribal Bison Cooperative, wild foragers, hunters, chefs, nutrition educators, and local food system activists. The focus of this list is on native wild plants and animals, although we also note which domesticated species unique to this region deserve further biological recovery and cultural revitalization.

We hope that discussion of this inventory among diverse parties will eventually lead to more sustainable harvests of the unique, traditional foods of Bison Nation. One of our goals is to see these foods biologically restored and revived for use in cross-cultural celebrations, tribal gatherings and ceremonies, communal picnics, diabetes prevention programs, and seasonal events. It is our wish that such a renewal will ultimately benefit the First Nations peoples of Bison Nation nutritionally, economically, and ecologically, ensuring the environmental health of future generations.

Wild Roots, Bulbs, Corms and Tubers

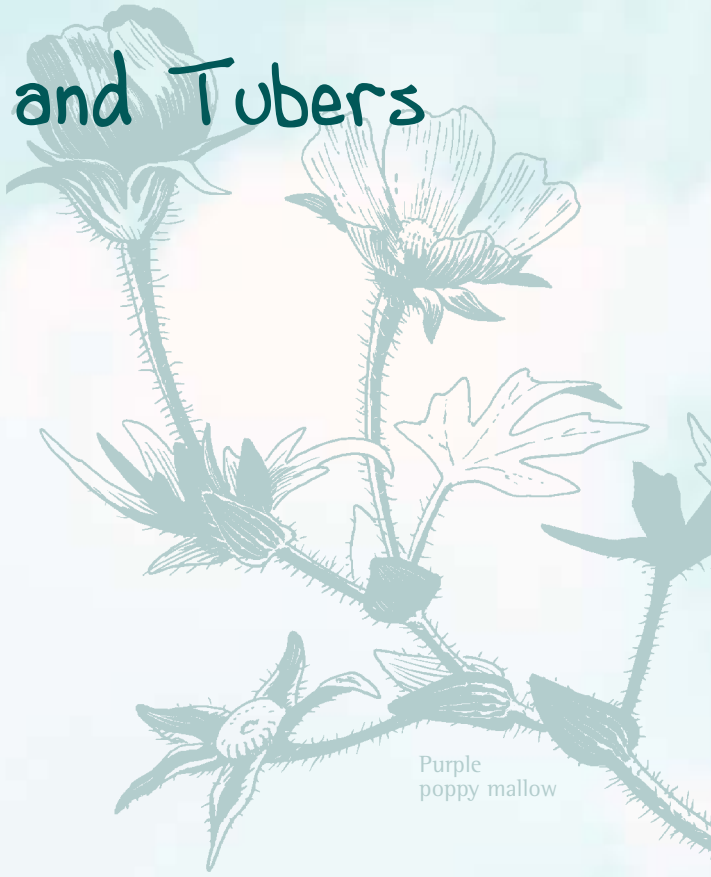
Prairie turnip, Scurf-pea, Indian breadroot, Pomme blanche, Tipsin, Dogoe, Mats, Tdokewihi, Aha, Esharusha, Hsu'proka, Nug'the (primarily *Pediomelum esculentum*, with *P. hypogaeum* and *P. cuspidatum* producing smaller roots in the short-grass plains). Considered the most important wild plant food of most Plains tribes, this egg-sized perennial taproot has a sweet, mild flavor with echoes of peanuts and turnips. It supports fingerlike leaves, a few hairy stems, and bluish flowers that fade to yellow before producing hairy pods and plump seeds. A map of the distribution of the prairie turnip range is nearly identical to that of Bison Nation, for it was historically found from Saskatchewan to Texas in both virgin tall-grass prairies and short-grass plains. Today, it survives in well-managed mixed-grass pastures and hay meadows, especially those on drier or limestone soils. Gathered communally from May through July, the prairie turnip harvest has been an event for all ages, with some folks filling bushels with their diggings. Some dry and powder the roots for winter survival, while others peel, cut and set their slices in the sun, or braid whole roots together as long strings. It can be boiled when still fresh, or when dried, re-hydrated, to be added to stews of venison, bison, or dog. A sweet farina could be pounded out from the dried roots to be used as a base for berry puddings. It has decreased in abundance with the spread of cattle grazing and the plowing of prairies for grain and soybean farming. Due to fragmented habitats and declining numbers, access to this food is now difficult in many places. Not at risk biologically, but at risk as a living food tradition.



Purple poppy mallow, Low poppy mallow, Ezhuta nantiazilia (*Callirhoe involucrata*). A perennial taproot not unlike a carrot or parsnip underlies the trailing, hairy stems, rounded leaves, solitary purple flowers, and round segmented fruit of this summer herb that is relished as a forage by bison. It is one of the few mallows of the American heartlands with fleshy, edible roots, and is found from Iowa to Colorado, as far south as Texas, and as far north as the Dakotas. Favoring the disturbed soils of wallows, roadsides, fields, and pastures it blooms on the open prairies from late February through August. The Osage, among others, dug for their roots in late summer through early fall, but stored them all winter in underground caches to allow later eating. Also used as medicine by the Dakota. Not at risk biologically, but at risk as a living food tradition.

KONZA PRAIRIE LTER PROGRAM

American groundnut, Indian potato, Traveler's delight, Bog potato, Dakota pea, Hopniss, Pome de terre, Mdo, Blo, Nu, Tdo, Its, Ai'-is-tom-i-mi-sis'-tuh (*Apios americana*). A prolific vine with clusters of violet-brown bean blossoms, this plant trails across the ground and over bushes, hiding dozens of egg-sized tubers just below the ground surface. Eaten raw, boiled, roasted, or fried groundnuts are favorably compared to "new" potatoes in flavor. When mixed with maple sugar, baked groundnuts have the flavor of candied yams. They have been a staple among at least a dozen Native American tribes and among ethnic communities immigrating to the Great Plains as well. Botanist Asa Gray once argued that if Europe had been colonized by North Americans rather than the other way around, American groundnuts would have been taken along and fully domesticated, just as Europeans later did with Jerusalem artichokes. Not at risk biologically, but at risk as a living food tradition.



American hog-peanut, Dakota pea, Wild pea(nut) vine, Maka-ta-omnicha, Hinbthi-abe, Ati-kuraru, Honink-boije (*Amphicarpaea bracteata*). This annual twining vine produces two kinds of flowers in late summer, one of which sets close to the stem or underground, developing into kidney-shaped "peanut" seeds in late fall. While the underground peanuts can be eaten fresh or boiled from fall through spring, the lentil-like seeds produced aboveground can also be harvested, boiled, and eaten in the late fall. Both have an agreeable but unusual flavor all its own. The hog-peanut ranges from southern Canada to eastern Texas, primarily in open woodlands and thickets associated with the tall-grass prairie and Great Lakes. Within this region, at least nine tribes hand-dug the ripened seeds of the hog-peanut after the first frosts had passed. The Omaha, Winnebago, Ponca and Dakota also shared in the harvests made by field voles they called "bean mice", who cached as much as several quarts of hog-peanuts by dragging them on box elder leaves to storage pits they excavated near their nests. As one Omaha elder told ethnobotanist Melvin Gilmore, "the bean mice are very industrious people; they even help human beings," and the voles were offered food such as corn or suet in return. Among the Sioux in 1849, Philander Prescott found the hog-peanut to have "a rich and pleasant flavor...superior to any garden vegetable I have ever tasted." They were cooked with fat from dried beaver's tail or freshly-processed dog meat. Not at risk biologically, but at risk as a living food tradition.

Wild Roots, Bulbs, Corms and Tubers

Prairie parsley, Biscuit root, Sahijela tatinpsinla (*Lomatium foeniculaceum, L. macrocarpum,* and *L. orientale*). These parsley-like perennial herbs often have large starchy roots that are typically sweet, with a slightly bitter aftertaste. They have wide ranges across the prairies and plains, preferring open hillsides and limestone ridges. Their roots were dug up, rubbed in hot ashes to remove their bitterness, and then baked. Their leaves were eaten like parsley. Not at risk biologically, but at risk as a living food tradition.

Bush morning glory

Wild licorice, Dessert root, Pithahatu-sakitstsuhast, Wi-nawizi, Haht' nowassoph (*Glycyrrhiza lepidota*). This perennial herb has sweet, anise-flavored rhizomes beneath fern-like pinnate leaflets and creamy-white clusters of flowers. Ranging over a large area west of the Mississippi, this licorice has been found in virgin prairies as well as disturbed grounds, from buffalo wallows to roadsides and floodplains. Among the Cheyenne, the root-like rhizomes were roasted, pounded, and separated into sweet potato-like pulp and stringy inedible fibers. Kin to commercial licorice, this herb was also considered to be a medicine by at least a dozen tribes. Not at risk biologically, but at risk as a living food tradition.

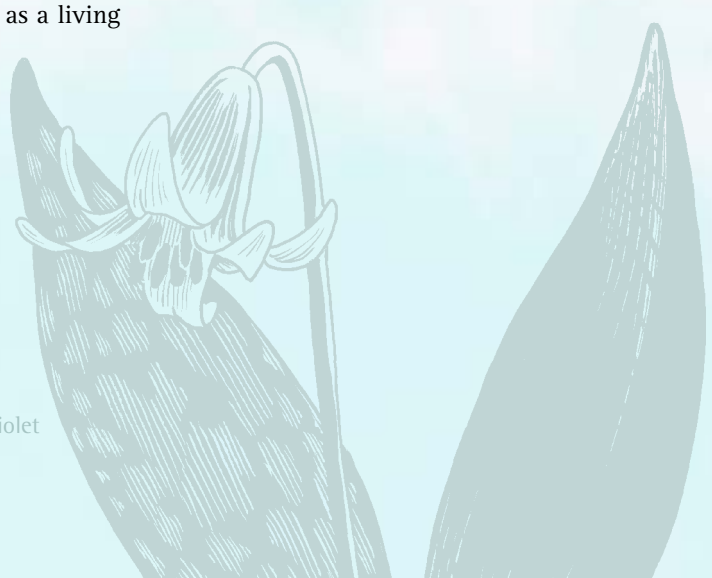
Dotted gayfeather, Dotted blazing star (*Liatris punctata*). A gorgeous scape of showy flowers gaily punctuates many open prairies. Below this scape are leafy stems and a small edible taproot that varies in flavor from place to place. The Kiowa and Blackfeet baked their sweet roots over campfires in the springtime. Other gayfeathers were used more medicinally as tonics and as anti-inflammatories. Not at risk biologically, but at risk as a living food tradition.

Jerusalem artichoke, Sunchoke, Hohinon, Kisu-sit, Girasola articiocca (*Helianthus tuberosus*). A perennial sunflower with multiple edible tubers the size of spring potatoes, the Jerusalem artichoke is both gathered from the wild and cultivated as a domesticated species. In Bison Nation, it grows on light, nutrient-rich soils in places periodically disturbed by floods, fires, bison, or humans. Rodents sometimes gather and cache the tubers for later use, which, according to Meriwether Lewis, allowed natives of the Upper Missouri to seek out, rob, and eat these caches. Nearly all plains and prairie peoples have savored them for centuries, although their means of preparing the tubers varied considerably. The tubers can be eaten raw, dried then re-hydrated, steamed, sautéed, boiled, fried, or pickled. They have a pleasantly-sweet, aromatic earthy taste, and a crunchy but watery texture. The tubers can be sustainably harvested without killing the plant in late autumn, after the first frosts, when the leaves have died back and the flower heads have released their seed-like achenes. The related Maximilian sunflower (*H. maximiliani*) was used in a similar way by the Sioux. Still common in certain wild habitats, a few domesticated cultivars of Jerusalem artichoke now dominate commercial "sunchoke" production, while many traditional folk varieties have gone into decline. The wild populations are not at risk biologically, but their use is at risk as a living food tradition.

White dog's tooth violet, Midland fawnlily, Snake lily (*Erythronium mesochoreum*). These white-flowered perennial herbs have broad lance-shaped leaves that grow out of thick bulbs that can be eaten raw at winter's end, or cooked after storing by steaming or pit-roasting. It was a favorite spring food for Winnebago children. A plant with a limited range in the southern tall-grass prairies, it occurs in patches, but is seldom abundant. It may be vulnerable to over-harvesting. Not at risk biologically, but at risk as a living food tradition.

Bush morning glory, Man-root, Man-of-the-earth root, Wild potato vine, Wild jalap, Kahts-tuwiriki, Mecha-meck (*Ipomoea leptophylla* and/or *I. pandurata*). A huge sweet potato-like root looms below long, trailing, low-growing vines with heart-shaped leaves and funnel-form flowers. Favoring the dry open range of sandy prairies as well as the banks of wallows and roadsides east of the Rockies, one or the other of these two species can be found from southern Canada to Texas. Both of these morning glory species produce perennial roots that are sometimes shaped like a human body. When dug up, they stand thigh-high, and weigh forty pounds or more. The Cheyenne, Arapaho, and Kiowa once used it as a survival food in drought years, but found it tough-skinned and exceedingly bitter if not carefully prepared and boiled. When roasted or baked, man-roots have the flavor of slightly bitter sweet potatoes. Neither delicacies nor staples, the starchy roots were also used medicinally to treat kidney, stomach, and urinary disorders and the seeds may have been consumed to induce visions. Not at risk biologically, but at risk as a living food tradition.

Wood sorrel, Sheep shower, Hase-sathe, Skidadihorit, Askirawiyu, Aw-tawt-an-ya (*Oxalis violacea* and *O. stricta*). These delicate, foot-tall perennials grow from nut-like bulbs, have heart-shaped clover-like leaflets, and star-shaped flowers that vary in color (purple or yellow) according to species. They grow in mottled shade in moist prairies, buffalo wallows, rocky open woodlots, and riparian thickets. The sour, slightly salty leaves were relished fresh both by bison calves and human children, while the pounded bulbs were stored and eaten by entire families of Native American and immigrant cultures. Not at risk biologically, but at risk as a living food tradition.



White dog's tooth violet


Chokecherry

Wild Fruits, Seeds and Flowers

Chokecherry, Wild cherry, Chokeberry, Nonpa-zhinga, Nahaapi nakaaruts, Campa'-hu, Pukkeep, O-hpan-ai-gaw, Malupwa, Schla scha, Cham-pah, Gunpa (*Prunus virginiana*). Although these small, fleshy, one-seeded fruit were used as food over a large area of North America, they have been particularly important to the peoples of Bison Nation. Produced on small trees or shrubs that grow in thickets, the berries can be black, red, or bluish-purple and considerable differences in size, flavor, and texture occur among the wild populations. They typically prefer the rich soils of abandoned wallows and corrals, fencerows, roadsides, and woody borders of fields. Chokecherries are found in many prehistoric camps and villages on the Great Plains, and archaeologists rank their importance as a food plant of prairie tribes as nearly on par with corn, beans, and squash. The Omaha determined their route for summer bison hunting not by where bison might be most abundant, but where chokecherries and prairie turnips would be available for women and children to harvest, while the men sought bison herds. Tribes such as the Lakota named the first full moon after summer solstice as the "Chokecherry Moon", a time when small bands would gather together at harvesting grounds. The berries gathered and dried by women would be combined with the bison jerky in the preparation of *wasna*. Not biologically endangered, it appears that chokecherries are making a comeback as part of ritual foods associated with the Sun Dance.

Wild plum, Hog plum, Wild goose plum, Osage plum, Potawatomi plum, Sloe, Pank-ai-da-lo, Kante, Kantsh-hu, Ni-waharit-nahaapi, Mak-u-mins, Yuseke, Parawaseke, Kuiseke, Aonyeyapi (*Prunus americana* and *P. munsoniana*). Fleshy oval fruit are produced on these multi-branched shrubs, which can be pruned into small trees. The plums can be yellow, fire-engine red, or purple and vary in size and flavor from patch to patch. These species range over most of Bison Nation and Wild Rice Nation, and have been dispersed westward by animals and humans. They occur in thickets on the edges of prairies, pastures, fields, and streams. Many native tribes and immigrants have eaten them fresh, and some have dried them or made them into jams. The Lakota had a "red plum moon" in August that was a time for feasting. Not at risk biologically, but at risk as a living food tradition.

Silver buffaloberry, Bullberry, Graise de boeuf, Miksinitsim, Mas'tinca-pute'-can, Haz-shutz, Zhon-hoje-wazhide, Tasque-sha-shah, Nar-nis, As-say, Ingahawmp (*Shepherdia argentea*). Bright red berries are produced by this spiny gray shrub with silvery round leaves. Buffaloberries are relished by bison when they become locally abundant in late summer. They may grow on steep, eroded slopes, in short-grass valleys or along dry washes from northern Bison Nation westward into Pinyon Nut Nation. At least a dozen Native American tribes as well as Mormon immigrants relished the berries fresh, dried, or made into jellies with a distinctive flavor. Not at risk biologically, but at risk as a living food tradition.

Plains prickly pear, Twisted-spine prickly pear, Beavertail cactus, Nopal, Tuna, Mah-ta'-o-munst, Unhce'la-blaska, Ohkotowatisis, Meyicimina (*Opuntia macrorhiza*). This low-growing cactus has bluish-green pads and reddish-purple, egg-shaped fruit that are eaten fresh, or dried for later use. It can spread vegetatively with browsing by bison, and the fruit were so abundant near Bent's Fort that a "Prickly Pear Sun Dance" was held by the Kiowa during the height of fruit harvest. On tasting the fruit in 1845, J.W. Abert sensed that "in their flavor the raspberry and watermelon seem mingled..." Not at risk biologically, but at risk as a living food tradition.

Annual sumpweed (*Iva annua*). A member of the sunflower family that appears to have been cultivated for its oil-rich achenes in prehistoric times, this summer-flowering sumpweed enjoys waste places, including buffalo wallows. Although its achenes have been found in many archaeological sites in the Mississippi and Missouri watersheds, its use in historic times has hardly been recorded. Although still biologically abundant, the cultural traditions associated with its culinary use are now extinct.


LYLE McNEAL

Sweet unicorn plant, Devil's claw, Torito, Gatuña, Espuela del diablo (*Proboscidea louisianica*). This annual summer herb with large velvety leaves and mottled purplish tubular flowers produces dry pods with long, claw-like appendages at the end of each capsule. These claws split apart and curve when the black seeds inside the capsules ripen, and they often wrap themselves around the fetlocks of bison, which then disperse the seeds. The plants range from dry sandy prairies in South Dakota through West Texas and Mexico, and were formerly abundant in buffalo wallows. The oil-rich seeds and the tender, immature pods have been eaten by the Apache, Comanche, and Mexican herders. Not at risk biologically, but at risk as a living food tradition.


Wild plum

Yucca, Soapweed, Spanish bayonet, Hupe'stola, Ek-siso-ke, Kaw-tzee-a-tzo-tee-a, Duwaduwa-hi, Chakida-kawta (*Yucca glauca*). This succulent perennial grows in rosettes of sword-like leaves, producing edible stalks loaded with creamy white blossoms, whose petals have the flavor and texture of leeks. Soapweed yuccas spread vegetatively when seasonally grazed in sandy blowouts, on limestone ridges, and upland prairies from Montana to Texas. The Kiowa and Apache roasted the flower stalks, and many people have eaten the fresh blossoms. Not at risk biologically, but at risk as a living food tradition.

Place-based Heirloom Grains, Vegetables, Fruits and Livestock

Deserving Regeneration in Bison Nation

Should bison regain some of their former abundance on the plains and prairies, there will still be room for diversified, small-scale agriculture on floodplains, within woods and hollows. Numerous native and adapted heirloom crops and heritage breeds should be part of that place-based rediversification. Here are a few:

APPLE:
Amur Red
Arkansas Black
Bedford
Black Ben Davis
Hawkeye
(Red Delicious)
Ingram
King David
Senator
Stayman Winesap
York Imperial

BEANS:
Arikara Yellow
Cherokee Trail of Tears
Great Northern
Hidatsa Red
Hidatsa Shield Figure
Hutterite
(Pale Green) Soup
Manitoba Black
Son of Star
(Montana White)
Yellow Transparent

CATTLE:
Pineywoods
Texas Longhorn

CHICKEN:
Plymouth Rock
Dominique
(Dominicker)
Rhode Island Red
Java

CORN, DENT:
Arkansas Red and White
Chase's White
Farmer's Reliance
Freed White
Golden Republic
Gorham Yellow
Gourdseed
Iowa Silvermine
(Logan County White)
Lenocher Homestead
Mesquakie
Pride of Saline White
Rhoad's Midland County
Payne's White
Rustler's White
Sherrod White
White Wonder
Will's Square Deal
Wimple's Yellow

CORN, FLINT:
Burleigh County Mixed
Cheyenne Agency Striped
Dakota White
Fort Peck Mandan
Golden Sioux
Mandan Black
Mandan Clay Red
North Dakota
Osage Red

CORN, FLOUR:
Cheyenne Pencil
Mandan Bride
Mandan Red
Mandan Yellow
Osage Brown

CORN, POP:
Cherokee

CORN, SWEET:
Acme
Des Moines (Crosby)
Mandan Red
Naragansett (Mandan)
Nuetta

GEESE:
Choctaw

HOG:
Choctaw
Mulefoot

HUCKLEBERRY:
High Mountain

LETTUCE:
Speckled Hansen

MELON:
Eden's Gem
Emerald Gem
Fordhook Gem
Green Nutmeg

OKRA:
Alice Elliot

PEACH:
Indian Blood Cling
Indian Blood Free
Lola Queen

PEAR:
Beirshmitt
Luscious
Patten

PERSIMMON:
Texas Black

PLUM:
South Dakota

POTATO:
Long John (Long Red)

PUMPKIN AND SQUASH:
Arikara Ebony Acer
Arikara Long
Arikara Round
Hidatsa Hubbard
Lakota
Mandan Yellow
Manitoba Miracle
Omaha (Indian)
Pike's Peak (Sibley)
Yellow Mandan

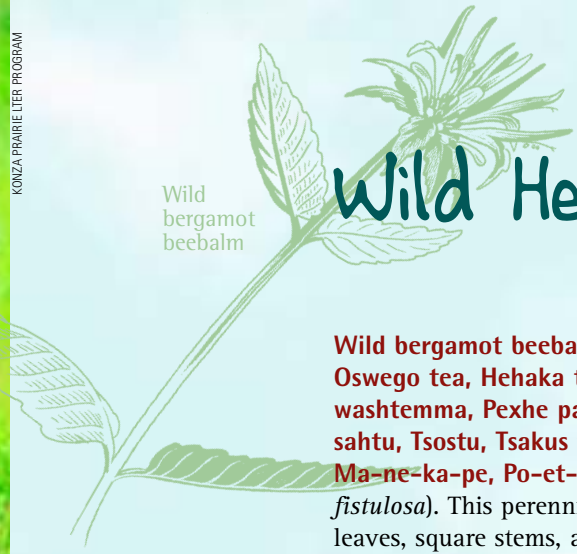
SUNFLOWER:
Arikara
Hidatsa Number One

TOMATO:
Amana Orange
Sioux Red
Wapsipinicon Peach

WATERMELON:
Cream of
Saskatchewan

WHEAT:
Turkey Hard Red

KONZA PRAIRIE LTER PROGRAM



Wild Herbs

Wild bergamot beebalm, Wild bergamont, Oswego tea, Hehaka ta pezhuta, Wahpe washtemma, Pexhe pa, Izna-kithe-ige, Tsu-sahtu, Tsostu, Tsakus tawirat, Parahaka, Ma-ne-ka-pe, Po-et-on-sai-on (*Monarda fistulosa*). This perennial has aromatic leaves, square stems, and lavender flower clusters. It loves rocky or disturbed soils of pastures, wallows, stream banks, and savannas, and is found over a wide range of plains and prairies. Its leaves are boiled as a tea or used fresh as a potherb. They have especially been esteemed by the Pawnee, who name four distinct varieties on the basis of smell and taste. A dozen tribes as well as Hispanic immigrants use it as a medicinal tea or an herbal seasoning. Not at risk biologically, but at risk as a living food tradition.

Prairie spiderwort, Ink flower, Kings crown, Snotweed (*Tradescantia occidentalis*). Frequenting wallows, roadsides, and railroad corridors in the tall-grass and short-grass prairies, this perennial herb has slender leaves and long stems crowned with purplish or bluish clusters of flowers. The young stems, leaves, and flowers have all been added to salads and used as herbal medicine for psychological disorders. Not at risk biologically, but at risk as a living food tradition.

Leadplant, Downy indigobush, Teaplant, Indian shoestrings , Te-huntonhi, Zitka'tacan (*Amorpha canescens*). This short shrub of the legume family has feathery leaflets and clusters of purple flowers, which mature into dry pods with olive-colored seeds. It grows in the tall-grass prairies from Canada to Texas, favoring open habitats and savanna-like habitats. While the Oglala Sioux made a nutritious tea with its leaves, others have used it as a medicine. Not at risk biologically, but at risk as a living food tradition.

Wild Game

Bison, American buffalo, Tatsanka, Yanash (*Bos bison bison*). The largest land mammal in North America, reaching two thousand pounds at maturity, the Plains bison is a dark brown, bearded herbivore with a prominent hump on its upper back. Considered to be sacred by some cultures, it is a habitat-modifying keystone species of the prairies and plains, but frequents savannas and woodlands as well. Millions were slaughtered or died of livestock diseases before 1890, but 750 bison survived the 19th century to form a handful of populations from which all current herds trace their ancestry. Once downed and killed, bison were first butchered from the back, so that their humps could be extracted, then their legs and ribs were removed. Their meat is sweeter and richer in flavor and a darker red color than beef. While sampling her first bison along the Santa Fe Trail in the 1840s, Susan Magoffin found bison meat "superior to any in soups served in the best hotels of New York and Philadelphia, and the buffalo marrow superior to the best butter or most delicate oil." The meat has seen a market revival over the last fifteen years, but much of what is currently sold is not yet a true grass-fed product from free-ranging animals. No longer endangered, they still need further genetic recovery, but already deserve to return to large, unfenced landscapes.

Pronghorn, American Antelope (*Antilocapra americana*). This is the fastest land mammal in North America. A smaller ungulate than the bison, and less influential on vegetation dynamics, the pronghorn antelope can nevertheless benefit from the reintroduction of free-ranging bison by co-inhabiting much the same range, foraging on a slightly different mix of grasses and forbs. The flavor of its meat has been likened to veal. Although not at risk, its hunting must be highly regulated.

Greater prairie chicken (*Tympanuchus cupido pinnatus*). This is the larger of two prairie chicken species. It includes the endangered Attwater's subspecies of Texas, as well as other subspecies that remain vulnerable but are recovering. The Greater prairie chicken remains a game bird in just a few areas, for it is only found in abundance in a few dozen patches from North Dakota through Texas. It resides in tall- and mid-grass prairies and uses open areas such as dry wallows for its booming grounds and nests.

Lesser prairie chicken (*Tympanuchus pallidicinctus*). This is one of the few birds restricted in range to the southwestern stretches of the Great Plains, where it prefers sandy sagebrush and grassy habitats. Requiring open display grounds like buffalo wallows for its leks, it has lost much of its former habitat through the conversion of short-grass prairie to croplands. It was formerly hunted intensively for its meat, which was boiled or baked. Uncommon, it can still be found using buffalo wallows as booming grounds, but it is vulnerable to over-hunting and habitat loss.

Sharp-tailed grouse (*Tympanuchus phasianellus*). This close relative of the prairie chicken has a broader range and greater population than its kin. It ranges from Alaska down through the palouse prairies of the Northwest to the Northern Plains. It favors savanna-like habitats, and grasslands with some shrubs for cover. Neither biologically nor culturally at risk.


Sharp-tailed grouse


LYLE McNEAL

You have driven away our game and our means of livelihood out of the country.

—Wanigi Ska (White Ghost)


Pronghorn

FURTHER READING

Elliott, Doug. 1995. Wild Roots: A Forager's Guide. Healing Arts Press, Rochester, Vermont.

Gerdes, J. T., C. F. Behr, J. G. Coors, and W. F. Tracy. 1994. Compilation of North American Maize Breeding Germplasm. Crop Science Society of America, Madison, Wisconsin.

Gilmore, Melvin R. 1977. Uses of Plants by the Indians of the Missouri River Region. University of Nebraska Press, Lincoln, Nebraska.

Hornaday, William T. 1887. The Extermination of the American Bison. Reprinted by the Shorey Book Stores, Seattle, Washington, 1971.

Kindscher, Kelly. 1987. Edible Plants of the Prairie: An Ethnobotanical Guide. University of Kansas Press, Lawrence, Kansas.

Moerman, Daniel. 1998. Native American Ethnobotany. Timber Press, Portland, Oregon.

Nabhan, Gary Paul. 1987. Oscar Will's seeds. Harvest Edition. Seed Savers Exchange, Decorah, Iowa.

Natureserve. 2006. www.natureserve.org.

Snell, Alma Hogan. 2006. A Taste of Heritage: Crow Indian Recipes and Herbal Medicines. University of Nebraska Press/Bison Books, Lincoln, Nebraska.

Welsch, Roger. 2006. Weed 'Em and Reap: A Weed Eater Reader. Falcon Guide/Globe Pequot Press, Helena, Montana.

Whealy, Kent. 2001. Fruit, Berry and Nut Inventory, Third Edition. Seed Savers Exchange, Decorah, Iowa.

Whealy, Kent and Joanne Thuente. 2004. Garden Seed Inventory, Sixth Edition. Seed Savers Exchange, Decorah, Iowa.

Will, George F., and George E. Hyde. 1917. Corn among the Indians of the Upper Missouri. William Harvey Miner Publishers, St. Louis, Missouri.

Wilson, Gilbert. 1987. Buffalobird Woman's Garden. Minnesota Historical Society Press, St. Paul, Minnesota.

Young, Kay. 1993. Wild Seasons: Gathering and Cooking Wild Plants of the Great Plains. University of Nebraska Press, Lincoln, Nebraska.

For more information and participation in the Renewing America's Food Traditions initiative, contact the following member organizations:

AMERICAN LIVESTOCK BREEDS CONSERVANCY www.albc-usa.org
The ALBC was founded in 1977 and is headquartered in Pittsboro, North Carolina. ALBC is dedicated to conservation and promotion of endangered breeds of livestock and poultry. ALBC monitors breed populations of ten traditional agricultural species in the US, identifies endangered breeds, documents breed performance, and promotes their use. ALBC is the preeminent source for information on genetic conservation in the US and has long recognized that sustainable agriculture is the ideal habitat for many breeds that are regionally adapted and selected for self-sufficiency. Contact: Don Bixby

CENTER FOR SUSTAINABLE ENVIRONMENTS www.environment.nau.edu
CSE brings together the talents and expertise of scientists, educators, farmers, chefs, independent scholars, business leaders, government agencies, non-profits, students, and community members to seek creative solutions to environmental and agricultural problems. These challenges are addressed through initiatives that safeguard agrobiodiversity, wild foods, and the cultural values associated with them. By combining technical innovations with the knowledge, values, and practices of local communities, the Center generates long-term environmental solutions such as healthy local food systems that enhance the lives of multi-cultural rural communities in the arid West and beyond. Its Canyon Country Fresh network features place-based foods of the Grand Canyon region. Contact: Gary Nabhan, RAFT founder

CHEFS COLLABORATIVE www.chefscollaborative.org
A national network of more than 1,000 members of the food community, promoting sustainable cuisine by celebrating the joys of local, seasonal, and artisinal cooking. It has held successful tastings and briefings on a variety of issues, including sustainable seafood solutions, grass-fed free-range meat production, GMO's and animal welfare, and safety. The Collaborative provides its members with the tools to run both economically and environmentally sustainable food service businesses. Contact: Jennifer Hall

CULTURAL CONSERVANCY www.nativeland.org
A Native American non-profit, working on the preservation and revitalization of indigenous cultures and their ancestral lands, storytelling, and harvesting traditions. The Cultural Conservancy's Storyscape media project focuses on the protection of storehouses of traditional knowledge surrounding nutrition, resources use, farming, foraging, and time-tested sustainable land management practices. The Conservancy strives to preserve and renew this endangered knowledge through ethnographic recordings and by providing technical assistance for tribes to protect their own cultural legacies. Contact: Melissa Nelson and Laura Baldez

NATIVE SEEDS/SEARCH www.nativeseeds.org
Since NSS was established twenty-two years ago, this non-profit has protected crop seeds from Native American and other ethnic cultures in the binational desert southwest. Its research and conservation programs maintain over two thousand varieties of seeds native to the region and their oral histories. Its educational and culinary events have focused on the role that native and traditional "slow release" foods can play in combating diabetes. Contact: Julie Evans and Kevin Dahl

SEED SAVERS EXCHANGE www.seedsavers.org
SSE was founded in 1975. It is the single most effective food crop conservation non-profit in history. SSE's Heritage Farm permanently maintains and displays 24,000 heirloom vegetable varieties, 700 pre-1900 apples, 200 hardy grapes, and herds of extremely rare Ancient White Park cattle. Since 1981, SSE's Garden Seed Inventory (Sixth Edition) and similar publications have tracked the availability of all non-hybrid vegetables, fruits, nuts, and berries in the U.S. Using Seed Savers Yearbook, SSE's members annually offer 12,000 varieties of heirloom vegetables, almost twice as many non-hybrid varieties as are offered by the entire U.S. mail-order garden seed industry. Seed Savers Exchange and its Heritage Farm have provided the models for organizations and projects in more than 30 countries. Contact: Kent Whealy

SLOW FOOD USA www.slowfoodusa.org
Slow Food USA is a nonprofit, educational, eco-gastronomic organization that supports a bio-diverse, sustainable food supply, local producers, heritage foodways and rediscovering the pleasures of the table. Founded in 1989 in Italy as a response to the opening of a McDonald's in Rome, Slow Food has grown to encompass a worldwide membership of 70,000 members in 45 countries. With over 10,000 members and 145 convivia (chapters) in the United States, Slow Food USA organizes projects including the Ark of Taste, which identifies and revitalizes foods, farmers, and traditions that are at risk of extinction; and Slow Food in Schools, which establishes garden to table projects in schools that cultivate the senses and teach an ecological approach to food. Contact: Makale Faber

ACKNOWLEDGEMENTS

This list could not have easily been compiled without reliance on Kelly Kindscher's 1987 inspiring ethnobotany of the region, or reference to Daniel Moerman's more comprehensive continental ethnobotany. NatureServe's website was used to check distributions and conservation status. This effort has been funded by the Lillian Goldman Charitable Trust and the Cedar Tree Foundation, and encouraged by Kent Redford of the Wildlife Conservation Society. We thank the entire crew of the Renewing America's Food Traditions consortium for their knowledge and guidance. Joan Carstensen offered both her editing and design talents to this effort, while Don Bixby, Kent Redford, Makale Faber, Brett Ramey, and Julie Evans offered helpful comments. We thank Lyle McNeal and the Konza Prairie LTER Program Web Site for photos and Zackery Zdinak for illustrations. We welcome further discussion, additions, corrections, and conservation actions.