

## Foragable Morganton Curriculum

These materials were developed by participants in the Foragable Morganton Community. Project vision, mission and goals were developed in a facilitated meeting of participants representing two Morganton food businesses, Wisteria Gastropub and Fonta Flora Brewery, and project staff – Mark Boyce, Doug Elliott and Laura Lengnick. Project learning outcomes and associated background and teaching materials were developed by Cultivating Resilience, LLC in consultation with project staff.



Foragable Community 2017

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## Foragable Morganton Curriculum

### Vision, Mission and Goals

Vision: Burke County and the city of Morganton are recognized as a model of community sustainability and resilience. Burke County residents enjoy a high quality of life in a region that cultivates biological and cultural diversity, is self-reliant and holds a wealth of community assets.

Mission: Foragable Morganton is a project of local businesses working together to increase the public's active participation in Burke County foodways in order to enhance the sustainability and resilience of the Morganton region.

Goals:

1. Raise public awareness of the community resilience benefits of diversity, self-reliance, and a balanced portfolio of assets.
2. Raise public awareness and appreciation for Morgantown region foodways as an expression of the ecology and natural history of the Piedmont region.
3. Facilitate business-led collaborations between businesses, organizations, government, and individuals to promote the knowledge and use of local and regionally-sourced wild and cultivated foods.
4. Increase the number of businesses, organizations and individuals who cultivate, gather, prepare, preserve and consume local and regionally-sourced foods.
5. Increase the amount of land in the Morganton region that is used for the sustainable foraging and cultivation of food.

### Learning Outcomes

Upon successful completion of the Foragable Morganton training, business staff will be able to:

1. Explain the vision, mission and goals of the Forage Morganton project and describe how each project partner is working to meet those goals.
2. Explain the concept of foraging as used in Foragable Morganton.
3. Define resilience and describe how community well-being is sustained over time by diversity, self-reliance, and the accumulation of a balanced portfolio of assets.
4. Describe the ecosystem type within which Morganton is located and some of the plants and animals characteristic of this ecosystem.
5. Explain the major cultural influences on the foodways of Morganton since humans first arrived in the region that would become Burke County.
6. Describe the natural history, traditional and modern uses, and the sustainable production/foraging of the following plants: Ramps, Nettles, Spicebush, Branch Lettuce, Honeysuckle, Persimmons, Berries, Corn, Squash, and Beans.
7. Locate credible information about the natural history, traditional and modern uses, and sustainable production/foraging of cultivated and wild foods used by people over the time that humans have inhabited the region that eventually became known as Burke County.

***Learning Outcome 1: Explain the Vision, Mission and Goals of Foragable Morganton.***

See above.

***Learning Outcome 2: Explain the concept of foraging as used by Foragable Morganton.***

The Oxford dictionary defines foraging as a verb that means “to search widely for food or provisions.” Popular use of the word today generally adds an additional distinction – foraging means to search for edible plants and animals inhabiting wild, uncultivated landscapes. This narrow definition of foraging stems from the common misconception that early humans survived by only hunting and gathering wild foods. Like most other animals, this line of reasoning goes, humans were a foraging species until agriculture was “invented” about five thousand years ago.

Recent anthropological and archeological research tells a different story. It turns out that early humans evolved variety of strategies for assuring a stable supply of food, medicine and useful materials. Hunting and gathering wild foods were important, but there is strong evidence that early humans also carefully managed the natural environments that they inhabited to enhance production of the foods that they favored by using practices such as plant selection, burning, weeding, tilling and mulching. As agriculture evolved – slowly and at different times – nearly all human cultures continued to depend on a mix of foraging and farming, with farmed foods eventually dominating the food supply of most cultures.

Foragable communities takes this broad view of foraging, which can take place in a diversity of environments ranging from unmanaged and managed wild lands, restored native ecosystems, food forests, to diversified farms and backyard gardens. The plants and animals that form the basis of a foragable food supply can be wild, naturalized, wild cultivated, introduced cultivated or any combination thereof.

The food species and the amount of human care involved are not important to the concept of foragable community. What is important is that foragable communities invest in and support the development of a regional landscape made up of healthy local wild and managed ecosystems at a range of scales that have the capacity to generate a wealthy and diversified portfolio of community assets.

*Sources*

Nature's Garden: A Guide to Identifying, Harvesting, and Preparing Edible Wild Plants, Samuel Thayer, Foragers Harvest Press, 2010

To Farm or Not to Farm, Ch. 10 in Guns, Germs and Steel: The Fates of Human Societies, Jared Diamond, Norton and Company 1999.

***Learning Outcome 3: Define resilience and describe how community well-being is sustained over time by diversity, self-reliance and a balanced portfolio of assets.***

Everybody seems to be talking resilience these days — but what does it really mean? Can it be measured and managed? As weather-related disruptions become more frequent and intense, resilience has become a new goal of businesses, organizations and government. Resilience is generally understood as the ability to recover quickly or “bounce back” from a damaging disturbance or shock, but it actually refers to a broader group of community-based capabilities that support effective adaptation: the ability to respond, to recover, and to make changes in order to avoid or reduce damages from disturbances and shocks and take advantage of opportunities created by change. These three capabilities are called response capacity (ability to avoid damage), recovery capacity (the ability to recover swiftly or “bounce back”) and transformation capacity (the ability to capture new opportunities or “bounce forward”).

Resilience science has origins in a diverse set of disciplines: engineering, ecology, psychology, human health, business, and disaster management. Engineering concepts of resilience focus on the design of physical assets – technologies like pesticides and genetically-engineered crops, or built infrastructure like roads, buildings, greenhouses, and irrigation systems – so that they can tolerate a specific level of disturbance or stress. This type of resilience, called robustness, is particularly useful in situations when potential risks to the system are well-understood and can reliably predicted.

The resilience concepts developed in ecology, psychology, and disaster management are more relevant to understanding and managing community resilience, because these disciplines have developed methods to assess, monitor, and manage resilience as a dynamic quality of systems made up of a mix of living and built components, each with its own sensitivities that interact to create resilience that is characteristic of the whole system.

Managing for community resilience aims to promote three key system behaviors: *response capacity* (ability to respond quickly and effectively to buffer disturbances so to avoid or reduce damage); *recovery capacity* (ability to quickly restore the system after damage); *transformation capacity* (ability change when the capacity to respond or recover is exceeded or changes that enhance community well-being are desired). These system behaviors are supported by three key qualities: diversity, self-reliance, and a balanced portfolio of capital assets.

### *Diversity*

*Diversity*—biological, social, and cultural—supports the capacity to adjust to changing conditions, disturbances, and shocks; to invent creative solutions to novel challenges; and to capitalize on new opportunities created by change. Two forms of diversity are particularly important to resilience: functional diversity and response diversity. Functional diversity describes the different kinds of services needed to maintain community well-being like food, water, energy, housing, transport and waste disposal. Most communities in developed nations have a high level of functional diversity – in other words, they have the capacity to provide a multitude of services to their community.

For some of these services, community members can choose between a number of different options that have different pros and cons depending on specific needs and existing conditions. For example, think about all the possible the transport options available to commuters in most mid-sized to large cities: walking, bicycle, private car, taxi or public transport by bus or train. Depending on existing conditions, which change over time, some of these options will support your commute better than others. Over short distances or during rush hour, walking or bicycling may be a good option, while at other times public transport may be your best bet. During a transport strike, private vehicle or a taxi may be your only option, but if fuel is unavailable because of a disruption in supply due to a pipeline failure or refinery shutdown, then you may need to fall back on the bicycle to get you where you need to go.

This ability to commute to your job no matter the conditions is an example of the response diversity of transport services. You can probably think of other important community needs – food, fuel, power, water, banking, education, medical, and waste disposal just to name a few – that different in their response capacity. For example, many communities have very low functional and response diversity in their electrical power supply. Most have only one electrical

power supplier who depends on a limited number of fuels (coal, oil, natural gas or uranium). Customers have few alternatives when the grid goes down, other than backup generator or battery power. High response diversity in critical services supports the capacity of a city to continue to function across a wide range of conditions.

### *Self Reliance*

*Self-reliance* refers the ability of a community to provide for critical community needs – such as food, water, energy, housing, and waste disposal – largely through local or regional suppliers. Self-reliant communities can and do enjoy the benefits of products and services provided through national and international suppliers, but these supplies are not crucial to community well-being. Communities that are not dependent on national and international suppliers for critical needs are less likely to experience disturbance or damage from events that happen in far away places. Managing your community to promote regional self-reliance tends to restore healthy natural resources, enhance human capacity, invest in social assets and increase regional financial flows.

In contrast, a community that depends upon a few, large-scale, highly-connected global suppliers for critical services is vulnerable to disturbances that occur both near and far. This is because in highly networked systems, disturbances can be swiftly transmitted through the whole system. Like toppling over a row of dominos, failure of one supplier in a tightly connected system quickly threatens all connected in the system. Large-scale, highly-connected systems are uniquely vulnerable to spectacular, system-wide failures that cause local damage throughout the network. Recent examples of these kind of failures include the East Coast blackout of 2003, the global financial meltdown of 2008, and the late blight pandemic in the Eastern United States in 2009.

### *A Balanced Portfolio of High Quality Assets*

*A balanced portfolio of high-quality capital assets*—natural, human, social, financial, and physical—provides the diversity of resources communities need to respond and to quickly recover from disturbances and to put innovative ideas into action. Governing the community with a goal of accumulating diversified portfolio provides the resources for sustaining community well-being under variable and changing conditions.

A healthy natural resource base enhances the functional and response diversity under a wide range of environmental conditions and buffers disturbances or shocks coming from outside the system. High-quality human and social resources enhance the learning and creative problem-solving required for innovative responses to challenging conditions. Financial and physical resources provide access to the necessary funds, tools, equipment and technologies for effective response and recovery efforts and to put innovative solutions into action.

Holding an abundance of capital assets in reserve to enhance recovery from disturbance and shock is another feature of resilient communities. Recovery reserves can be natural (energy, water, food stores), human (experience/ease of managing change), social (community memory, disaster response skills, public assistance), financial (savings, access to financial resources) or physical (public shelters, communication technology, backup generators).

Resilience thinking offers a new community management strategy that is particularly useful in a changing conditions. It extends the principles of sustainability with the explicit recognition that

all social and ecological systems exist in a state of continuous dynamic change. Applied to the design and management of communities, resilience thinking has the potential to enhance community resilience while furthering economic, social, and environmental sustainability goals.

Adapted from New Times, *New Tools: Managing for Resilience*, Chapter 9 in *Resilient Agriculture: Cultivating Food Systems for a Changing Climate* (New Society Publishers 2015)

***Learning Outcome 4: Describe the ecosystem type within which Morganton is located and some of the plants and animals characteristic of this ecosystem.***

North Carolina has within its borders the highest mountains east of the Mississippi River, a broad, low-lying coastal area, and all the land in between. Geologists divide North Carolina into four *provinces* — regions with common features. These four regions have unique landforms, soil types, and plant and animal communities. From west to east, they are the Blue Ridge Mountains, the Piedmont, and the Coastal Plain, which is divided into an Inner and an Outer Coastal Plain. This variety of landforms, elevations, and climates has produced one of the most diverse states in the United States. It has also influenced the way people have lived in North Carolina for thousands of years.

#### Four “provinces”



The four geological provinces of North Carolina, with county boundaries shown.

This map from the U.S. Geologic Survey shows the various geologic provinces of the eastern United States, including those that make up the Appalachian Mountains.

Remember, though, that although North Carolina’s eastern and western boundaries are natural ones — the ocean and the Appalachian Mountains — its northern and southern boundaries are simply lines drawn on a map. No natural features mark the borders with Virginia, South Carolina, or Georgia. The Coastal Plain, Piedmont, and Mountain regions continue up and down the east coast of the United States.

#### *The Coastal Plain*

The Coastal Plain is the easternmost region of North Carolina. From the Atlantic Ocean it rises gently to the west, stretching as far as Raleigh and Fayetteville and covering about 45 percent of the state’s total land area.

At various times in the distant past, sea level was higher, and parts of the Coastal Plain lay under the ocean. As the ocean retreated, it left sandy ridges across the coastal plain that still remain — visible evidence of the old shorelines. The greatest of these ridges is the *fall line* that separates the Coastal Plain from the Piedmont. When rivers flowing to the sea reach the fall line or another escarpment formed by an ancient shoreline, waterfalls form— hence the term. When European settlers arrived in North Carolina, they could travel up the rivers by boat as far inland as the falls, but there they had to stop and find another form of transportation. They often founded trading posts at the first waterfalls encountered on the trip upriver from the coast and those trading posts grew into towns and cities that were eventually linked by roads. Today, Interstate 95 follows the fall line along much of the east coast.



### **The Piedmont**

In the Piedmont — which means “foot of the mountains” — the land rises more rapidly, forming rolling hills. Rivers flow more rapidly here, too, than in the Coastal Plain, which makes travel by water more difficult. But because the rolling, wooded hills of the Piedmont are easy to cross on foot and by vehicle, it provided both American Indians and early European settlers with a natural corridor for transportation from Pennsylvania and New York as far south as Georgia. Today, I-85 follows this corridor through the Carolinas.

The rock under the Piedmont is harder than in the coastal plain, and a great deal of clay makes agriculture more difficult than in the Coastal Plain but provides raw material for pottery. Some of the rocks in the Piedmont contain valuable minerals — including gold, which was discovered in Cabarrus County in 1799. These and other natural resources, as well as the ease of transportation and the availability of fast-flowing rivers for water power, made the Piedmont the center of North Carolina’s manufacturing and industry.

In some parts of the Piedmont, the underlying rock is harder and slower to erode. As the land around these regions eroded, it left behind hills or low mountains called monadnocks. The Uwharrie Mountains, Sauratown Mountains (including Pilot Mountain (pictured above) and Hanging Rock), South Mountains, Brushy Mountains, and Kings Mountain are all monadnocks in the Piedmont region. Because these “lonely mountains” are higher above sea level and therefore cooler than the surrounding land, they can provide habitats for plants and animals that are not otherwise found east of the Blue Ridge.



## The Blue Ridge Mountains

At its western edge, the Piedmont rises 1,500 feet above sea level, and the Blue Ridge Mountains begin. The Blue Ridge Mountains are part of the great Appalachian chain that stretches from northern Alabama all the way to southeastern Canada. North Carolina's mountains include Mount Mitchell, which at 6,684 feet is the highest peak in the eastern United States.

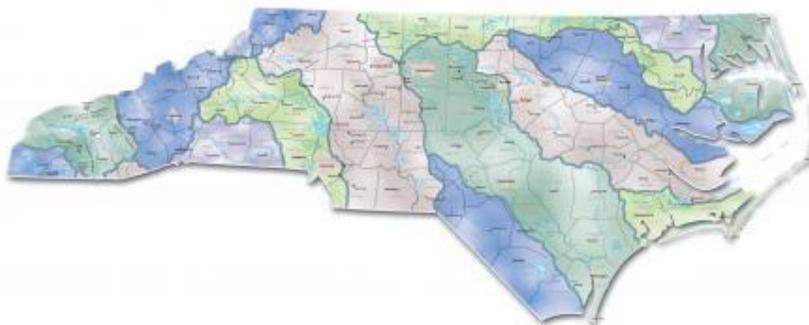
The rapidly changing elevations of the Blue Ridge provide homes for a number of different kinds of forests. The average temperature declines about 5.5 degrees Fahrenheit with each 1,000-foot increase in elevation above sea level — 22 degrees' difference between Asheville and Mount Mitchell, only eighteen miles away. This diversity means that almost half of all the higher plant species (such as trees and flowers) that occur in North Carolina are found in the Blue Ridge, along with more than 350 species of moss, 2,000 species of fungi, 67 species of mammals, and 50 species of salamander.

The Blue Ridge also includes a rare temperate rain forest in the Jocassee Gorges, located along the North Carolina-South Carolina border. Erosion has worn deep gorges between the mountains where warm, moist air is trapped and condenses into rain. Some tropical species of plants found in Jocassee Gorges are thousands of miles from their nearest neighbors in Central and South America.

### *A Land Linked by Water*

The regions of North Carolina are linked by one thing — water. Water falls as rain, snow or ice everywhere in North Carolina, of course, but its path back to the sea begins on the highest peaks of the Blue Ridge. There, rivulets of rainwater flow downhill and collect into tiny streams, which merge into larger and larger streams and eventually become the state's rivers. These rivers flow out of the Blue Ridge and through the Piedmont, draining runoff from more and more land as they go. By the time they reach the Coastal Plain, they are broad and slow-moving. Near the coast they feed estuaries and other wetlands.

The area drained by a single river into the sea is called a *river basin* (or, sometimes, a *watershed*). The map below shows the state's river basins. Not all of the rivers that flow through North Carolina empty onto our coast;

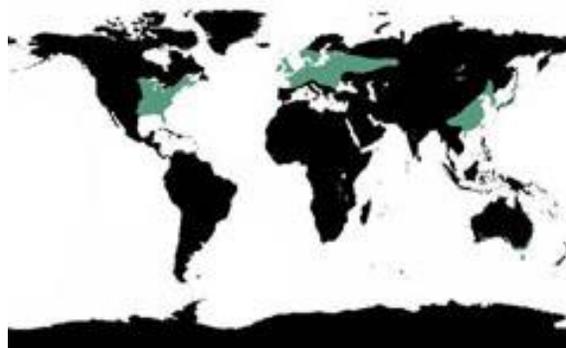


some flow further south into South Carolina and Georgia, or west into Tennessee. Some also start farther north, in the mountains of Virginia. Because all parts of a river basin are connected by water, all life in a single river basin is connected and interdependent. North Carolina's rivers link the Blue Ridge, Piedmont, and Coastal Plain.

### *The Forests of the Piedmont*

From the time the first humans settled in North Carolina — some 10,000 years ago — their lives were shaped by the region’s geography. Mountains, rivers, wetlands, forests, plains all determined what kinds of lives people could live in various places. And, in turn, humans shaped the region’s environment — hunting animals, clearing forests for farm fields and homes, draining wetlands, damming rivers. North Carolina’s history is in part the story of humans’ interactions with the natural world, and understanding the natural world is the first step toward understanding that history.

The Piedmont region of North Carolina is located in the great temperate deciduous forest that covers the eastern half of North America. Temperate deciduous forests also covers most of Europe and parts of China and Japan. These forests occur in the temperature climate zones of the earth, those zones with four distinct seasons and plentiful rainfall (30 to 60 inches) that is evenly distributed through the year.



The forests of the Piedmont region of North America were extensive regions of open Oak-Hickory-Pine forests broken by isolated prairies and wetlands.



Temperate deciduous forests have a great diversity of plant and animal species that tend to inhabit one of three different levels that span the height of the forest.

Lichen, moss, ferns, wildflowers and other small plants can be found on the forest floor.

Shrubs, smaller trees and young trees fill in the middle level, or forest understory. Common understory trees include sassafras (*Sassafras albidum*), hophornbeam (*Ostrya virginiana*), green hawthorn (*Crataegus viridis*), pawpaw (*Asimina triloba*) and

painted buckeye (*Aesculus sylvatica*).<sup>[7]</sup> Flowering dogwood (*Cornus florida*) blooms in early spring.<sup>[6]</sup>

Shrubs include highbush blueberry (*Vaccinium corymbosum*), lowbush blueberry (*Vaccinium angustifolium*), mapleleaf viburnum (*Viburnum acerifolium*), American strawberry-bush (*Euonymus americanus*), huckleberry (*Gaylussacia baccata*), mountain laurel (*Kalmia latifolia*).<sup>[6]</sup>

Hardwood trees like maple, oak, birch, magnolia, sweet gum and beech, hickory, walnut and ash make up the third level. Pine trees are also be found mixed in with the hardwood trees in in the Piedmont. Common pine species are shortleaf pine (*Pinus echinata*) and loblolly pine (*Pinus taeda*).

Both oaks (*Quercus* spp.) and hickories (*Carya* spp.) are abundant in these forests. The most common oaks (*Quercus* spp.) of this ecoregion are white oak (*Quercus alba*), northern red oak (*Quercus rubra*), black oak (*Quercus velutina*), and scarlet oak (*Quercus coccinea*). Black and scarlet grow in open forests. Black oak grows in nearly single-species stands on dry, exposed sites. Scarlet oak grows in various habitats. Chestnut oak (*Quercus prinus*) is found on ridgetops.

American chestnut (*Castanea dentata*) was formerly an important tree in these forests, but its population was destroyed by the chestnut blight in the early 20th century. It still persists as an understory tree, but is often killed by the blight before it matures.<sup>[6]</sup>

In a mature forest, these tall trees form a canopy which blocks most of the sunlight from penetrating through to the plants below. To compensate, the plants that make up the understory and herbaceous layer are shade-tolerant, meaning they can survive with a lower amount of sunlight. Due to the seasonal nature of temperate deciduous forests, many of the plants in this region are perennial, meaning they grow and flower only during the warm, summer months.

Thick, woody shrubs like rhododendron, buckthorn, sumac, honeysuckle, or dogwood dominate the dense understory. This region of the forest is generally the most biodiverse area of the forest; a single forest can have over a hundred different species of plants! Throughout the early spring and summer, shade-tolerant herbs and wildflowers like Jack-in-the-Pulpit, May-apple, Bedstraw, Purslanes, and mustards flower and go to seed within a few weeks to months.

### *The Wildlife of the Piedmont*

The great diversity of plants and landscapes, coupled with the temperate climate of the Piedmont forests supports an abundance of animals. White-tailed deer, black bears, gray squirrels, cottontail rabbits, raccoons, and opossums are some of the mammals that found a comfortable home in these forests. Some common birds that you are likely to see or hear in the Piedmont include bald eagles, owls and hawks, wild turkey, ruffed grouse, woodpeckers, doves, ducks, jays, warblers, sparrows, finches and many others – more than 400 species of birds have been sighted in North Carolina. The Piedmont is also home to a great diversity of fish, salamanders, frogs and toads, lizards, snakes, and turtles.

White-tailed deer, the only deer native to North Carolina, move over the course of the year between cool creek bottoms in summer and old fields, dense timber and evergreen stands in winter as they seek sufficient food, water, and protection from heat and cool. Deer eat a variety of fruits and nuts, including blackberries, blueberries, apples and acorns. They also eat herbs, grasses, and the twigs and leaves of woody plants.

In North Carolina, black bears live in mature mixed hardwood forests. During the winter, most bears den up in hollow trees or dense evergreen cover. The rest of the year, they range widely in the forest foraging a varied diet that typically includes nuts, berries, sassafras, insects and small animals.

Squirrels thrive in mature oak, beech, hickory and walnut trees which provide nuts for food, escape from danger, and den cavities and strong branches in which to build their nests. Cottontail rabbits, an important food source for larger predatory animals such as foxes, hawks and owls, seek out recently disturbed areas such as fields or young forests where there are plenty of low-growing shrubs and grasses that they can use for food and cover.

Raccoons live in a wide variety of habitats including mature hardwood forests, fields, wetlands, and forested swamps. Usually found near water, they forage a wide variety of foods including nuts, berries, grains and corn, as well as grasshoppers, birds, crabs, frogs, fish eggs, snakes, earthworms and snails. The opossum prefers moist, deciduous woodlands but can also be found in prairies, marshes and farmlands. They are shy, secretive, nocturnal animals that eat rodents, insects, birds, lizards, snakes, decaying animals, fruits and grains.

Wild turkeys require many different types of forestland to survive, including mature stands of mixed hardwoods, relatively open understories and scattered clearings with several sources of permanent, open water. Turkeys eat almost anything they can swallow, including acorns, grass seeds, weeds, blackberries, grapes, cherries, grasshoppers, millipedes, snails and worms. They use clearings in the forest as a source of food as well as for breeding, nesting and brood rearing. At night small flocks roost in trees.

The ruffed grouse, a very secretive but permanent resident of the western piedmont, gets its name from the tuft of black feathers on the neck of the male. The male also is known for the drumming noise he makes with his wings when he tries to attract a mate and ward off other males. The drumming noise can be heard as far as a mile away. Ruffed grouse eat leaves, buds, seeds, nuts, berries, grasshoppers and crickets.

Numerous indigenous salamander, frog, and toad species live in practically every habitat in the the Piedmont region. Important frog species include the bullfrog, Carolina gopher frog, river frog, and southern leopard frog. There are also a number of tree frog species, such as the southern cricket frog, green tree frog, and southern peeper frog. Toad species include the American toad, oak toad, and southern toad. Salamanders live in or near rivers, creeks, and swamps.

Eastern box turtles are reptiles that live in forested areas at elevations of up to 4,000 feet. They usually live on land but are also good swimmers that can be found in shallow ponds on dry, hot days. Eastern box turtles eat worms, snails, insects, spiders, snakes, lizards, frogs, other small animals and plants, including some poisonous mushrooms. They sleep under rocks or logs, or in burrows where they are safe from predators and may spend their entire lives in an area no bigger than a football field.

Thirty-seven species of snakes inhabit a diversity of landscapes throughout the state. Some snakes common to the Piedmont include garter, black racer, corn, black rat, ringneck, hognose, milk, coachwhip, and king snakes. Five species of poisonous snakes are found in North Carolina. Three species-the eastern diamondback, pygmy, and timber-are rattlesnakes. The poisonous copperhead can be found in or near forests in all parts of North Carolina, while the water moccasin inhabits the rivers and wetlands of the coastal plain region.

Temperate forests have made comfortable homes for people over the whole course of human development throughout the world. The temperate climate, high biodiversity, and fertile soils of temperate deciduous forests made them attractive settings for foraging, farming and settlements. These forests continue to offer many attractive features for development to this day.

***Learning Outcome 5: Explain the major cultural influences on the foodways of Morganton since humans first arrived in the region that would become Burke County.***

*The People of the Piedmont*

The forests of the Piedmont and nearby Blue Ridge Mountains provided a rich landscape in which to forage and farm when the first known humans to inhabit the North Carolina Piedmont arrived about 12,000 years ago. Archeological evidence suggests that these PaleoIndians most likely only visited the region, travelling from the coast to hunt deer, elk, bison, and bear in the rich forests at the foot of the Blue Ridge Mountains.

The direct descendants of the PaleoIndians slowly moved inland and adapted to the diversity of landscapes from the coast to the mountains. For more than 7000 years these people, called Archaic Indians, developed the knowledge and tools that they needed to sustain their communities from the food and raw material resources that surrounded them. Their camps and villages occur as archaeological sites throughout North Carolina, on high mountain ridges, along river banks, and across the Piedmont hills.

About 4000 years ago, a major cultural change – the emergence of agriculture - marked the evolution of the Archaic Indians to the Woodland Indian culture that followed. Woodland Indians continued to follow most of the subsistence practices of their ancestors, hunting, fishing, and gathering during periods of seasonal abundance of deer, turkeys, shad and acorns. They also began clearing fields, planting and harvesting crops like sunflowers, squash, gourds, beans and maize and to settle in larger, semi-permanent villages along stream valleys, where soils were suitable for farming.

When the first European explorers entered the interior of NC in the 1540's, most of the Native American groups that they met followed Woodland economic and settlement patterns, occupying small villages and growing crops of maize, tobacco, beans and squash, while still devoting considerable effort to obtaining natural foods like deer, turkey, nuts and fish.

In some parts of the state, large villages typically included one or more flat-topped, earthen "temple" mounds, public areas and buildings ("council houses") used for religious and political assemblies. Wooden palisades, earthen moats or embattlements were placed around many villages for defensive purposes. Far-reaching trade and tribute networks were maintained at great expense to provide necessary items to the ruling classes of Mississippian Indian groups throughout the Southeast and Midwest.

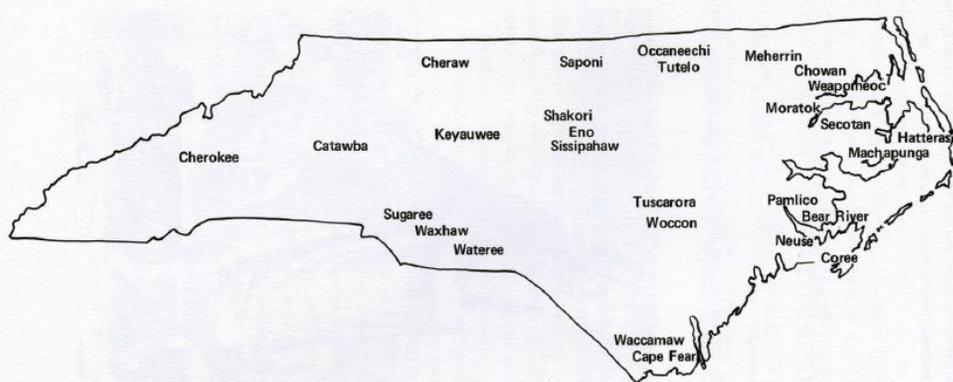


Fig. 1. North Carolina Indian Tribes at the Time of European Contact  
(From Ruth Wetmore, *First on the Land*, p. 28)

The largest Mound Builder settlement in North Carolina was at Joara, a 12-acre (49,000 m<sup>2</sup>) site and regional chiefdom near present-day Morganton that was established in about 1000 CE. Joara would become the first European settlement in the interior of North Carolina (and what would become the United States) when a Spanish expedition arrived and built Fort San Juan in 1567. The following year the Indians killed nearly all the Spanish garrisoned at this and five other interior forts, and burned Fort San Juan. It was two centuries before Europeans tried to settle again this far west in the Carolinas.

### *The People of the River*

The Native American tribe that inhabited the Morganton area at the time of first European contact gave their name to the Catawba River. The Catawba people— also known as the Iswa (in the Catawba language *iswa* means “people of the river”) lived in the Catawba River watershed in the Piedmont region of North and South Carolina. Most of what we know about the foodways of the Catawba come from reports made by early European explorers and first wave of colonists moving from the coasts into the region that would become Burke County.

The area was rich in Native American foods and very quickly was also sown in whatever the Europeans brought over from their native home land. Early colonists adapted the crops and farming techniques that they brought from home and added many new foods with the help of the Native Americans living in the region.

Early settlers to Burke County, Samuel and Elizabeth Murray arrived in what would become Fletcher NC in about 1795. Elizabeth’s journal suggests that they had an affinity for the Cherokee as well as a fear of them. They idealized the Cherokee’s relationship with the land and had learned much from their native ways. Samuel’s wife, Elizabeth, Coates relates, “practiced cooking first hand under her mother who ... benefited from her family’s initial friendship with the Indians, and their advice on what vegetables grew best and even how to prepare them. This included the introduction of corn into our lives.”

The Europeans learned to prepare the New World foods in the manner of their native neighbors or sometimes prepared them similar to whatever they resembled that they were familiar with. Food was probably more varied and more plentiful in Colonial America than most of the colonists had known in the old countries. A travel journal published in 1711 listed an amazing diversity of foods produced in North Carolina, both native and European, along with some notes on how these foods were prepared.

Foods from the forest included a great diversity of nuts which were eaten out of hand, ground up and added to soups, broths and stews, and dried and finely ground to be used as flour in breads and cakes. Chestnuts, acorns, hazelnuts, black walnuts, chinaquapin and hickory nuts were commonly used by the native americans living in North Carolina.

Highly valued wild fruits gathered from forest understory included crabapples, cherries, mulberries, persimmons, grapes (muscadine and scuppernong), strawberries, plums, blueberries, blackberries, raspberries, and elderberries. Berries and fruits were added to bread, boiled with any other available vegetables or wild plants, or dried and stored for later use. Colonists foraged these wild fruits and introduced their own cultivated fruits brought from home including cherries, figs, peaches, plums, currents, apples, pears, quinces, apricots, and gooseberries.

Many forest floor plants were used as vegetables and herbs by Native Americans. Wild potatoes, wild onions, wild lettuce, miner's lettuce, juniper berry, wild ginger, ramps (wild garlic), chickweed, wild mustard greens, lamb's-quarter, and pokeweed, mayapple, soloman's seal, jack-in-the-pulpit, early blue violet, wild bergamot, butterfly milkweed, and mushrooms are just a few examples. Early spring greens like chickweed and pokeweed were especially appreciated at the end of winter by both native peoples and colonists. A dish of greens and eggs, also plentiful in spring, cooked together was a favorite tonic for restoring strength and health after months of eating only dried foods during winter.

The forests and waterways also provided good hunting and fishing. Large animals like deer, bear, bison, and elk provided meat as well as many other useful materials. Venison and bear were staple meats. Bear fat was prized as a preservative. Smaller animals of all kinds also found their way onto both Catawba and colonists' tables, including beaver, skunk, raccoon, opossum, squirrels, pigeon, wild ducks, turkeys and geese, partridge, pheasant, dove, lark and crows. Both groups also routinely ate turtles, snakes, frogs.

The tongues of deer and bison, the tails of beaver, and "young wasps in the nest before they can fly" were considered delicacies. Bear fat and venison suet were preserved and used in the preparation of food. Both Native Americans and whites cured bear meat into bacon and bear lard made excellent bread. Native Americans quickly adopted the keeping of cattle and swine introduced by the colonists.

Common cooking methods included boiling, roasting, smoking, and baking in a coating of mud very similar to the method of fish cooking. Meat was often placed onto the end of a sharpened stick which was inserted in the ground leaning toward the fire where it roasted to perfection. Methods of boiling included boiling in hides, either suspended from a tripod over the fire or by placing heated stones into the hide with the food to be cooked. Earthenware pots were replaced early by traders' metal kettles, though some tribes were quicker to adopt them than others.

Large quantities of fish and shellfish were gathered annually by traps, weirs, spears or arrows, poisoning streams, netting, trot-lines, angling, by the bare hand, and by attracting fish to night fires. They were often preserved for winter by drying and smoking. Oysters were dried in quantities enough to last the winter and often transported long distances back to villages. The types of fish harvested depended on indigenous species particular to any river or region. Common species in the Catawba River likely included pickerel, rockfish (bass), trout, perch, sunfish, suckers, catfish, and eels.

In addition to the preparation of soups and pottages, the methods of cooking fish included roasting over a framework of twigs and coating the entire fish in mud and baking it thus coated in hot coals. When the hardened mud coating was broken away the scales and skin came away with it leaving only the tender flesh.

Cultivated plants and grains played an important role in the Catawba diet even before the arrival of the colonists. Corn, beans and squash were produced in large quantities on Catawba farms, along with sunflowers, pumpkin, and melons, tomatoes, and many types of peppers. With the arrival of Europeans, the Catawba, like many other tribes, were introduced to and adopted new

cultivated plants such as Irish potatoes, sweet potatoes, leeks, onion, cabbage, garlic, new varieties of melons, turnips, and parsnips.

Corn, a staple food of the Catawba, was eaten in many ways. Green corn (immature ears) was roasted. Dried corn was boiled with meat and beans, or ground and made into bread, grits, porridge, mush, and hominy. Corn was also used to make a popular drink by draining and straining the liquor from boiled dried corn. The Catawba cultivated many different varieties of corn that lent themselves best to certain foods or methods of preparation, some being better for meal or flour or hominy than others, for example. They also planted corn in succession through the growing season to prolong the green corn harvest.

The most popular method of food preservation was by drying, and this applied to meats, fruits, nuts, grains, and vegetables (cultivated and wild). Large caches of dried corn, peas, beans, pumpkin, and squash were common with many Southeastern tribes. Sugars and syrups made from the sap of a variety of different tree species including maple, birch, black walnut, and butternut were documented by many early writers. And salt used for seasoning and preserving was critically important to both Native Americans and the colonists.



Colonists didn't just borrow the word for cornbread; they also borrowed Native American ways of preparing cornmeal, adapting the recipes to suit English palates. Native Americans made cornbread in one of two ways: with a paste of crushed green corn kernels, or from a batter made by adding water, salt, and animal fat to cornmeal. They would use a thin paste to make flatter cakes, resulting in something more like a cornmeal pancake. They treated a thicker batter as bread dough, shaping by hand into loaves for baking. *Cornpone: A Borrowed Term for a Borrowed Staple*

The first large scale settlement of the area that would become Burke County began in the mid-1700's. Scots-Irish and German settlers coming from points north on the Great Wagon road settled land that had previously been the northern part of the Catawba's territory.

In 1777, the people petitioned the North Carolina Assembly for formation of a new county, which was named after patriot Thomas Burke. Established in 1777 and incorporated 1784, Morganton was named for Brigadier General Daniel Morgan of Revolutionary War fame. Its first name was Morgansborough which was later changed to Morgantown then to Morganton. As Morganton's people came to depend more on farming for their food, the forests in Morganton region became a source of materials for a rapidly growing nation.

The 1800's was a time of industrial development in Burke County. The introduction of the Southern Railroad after the Civil War increased the population and stimulated the industrial economy of the region. The 19th and 20th centuries witnessed a gold rush, the rise of timber, textile and furniture industries, and an influx of state institutions to Morganton.

Prior to the turn of the twentieth century, Waldenses left the Cottian Alps of Italy to settle in Valdese, the second largest town in Burke County. In the 1970s, an influx of Hmong immigrants came to escape political persecution, and the 1990's brought a wave of immigrants from Central America seeking economic opportunities in the region's poultry, textiles, and furniture industries.

For the last 300 years or so, Burke County history includes a blending of foodways from across the globe as wave after wave of colonists arrived to settle in the region – Native Americans from the west and north, Scots-Irish, German, Italian from Europe, the Hmong from Asia, and most recently Hispanic peoples from Central America. Each wave of immigrants brought with them foods from home and adopted the foods of their new land. Although wild foods slowly lost their importance as Native American populations died out and colonial populations grew, hunting and gathering continued to provide a significant source of food well into the 20<sup>th</sup> century. It has only been the last 50 years that the people of Morganton no longer depend on local farms and forests for the majority of their food.

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***Learning Outcome 6: Describe the natural history, traditional and modern uses, and the sustainable production/foraging of the following plants: Ramps, Nettles, Spicebush, Branch Lettuce, Honeysuckle, Persimmons, Berries, Corn, Squash, and Beans.***

*The Foragable Morganton Plant Info Sheets are still under construction, but will soon be available on the Resources page of the Foragable Community Website.*

***Learning Outcome 7: Locate credible information about the natural history, traditional and modern uses, and sustainable production/foraging of cultivated and wild foods used by people living in the Morganton region since humans first arrived in the region that would become Burke County.***

Gathering foodways resources can be difficult and take a lot of time, because of the large number of topics and the local scale of information needed to develop a rich picture of a region's foodways. You will want to learn about regional ecology, cultural history, culinary history, and the ecology, cultivation, harvest, processing, preparation and consumption of wild and domesticated plants and animals used as food, medicines and materials. It can be particularly hard to find credible information on the use of wild plants.

In addition, a lot of good information about local and regional foodways is not available in digital form, so you may have to do some searching in libraries to find it. A great web-based tool for searching library collections and requesting interlibrary loans is WorldCat, a search engine that connects you to more than 10,000 libraries worldwide. <https://www.worldcat.org/>

You can evaluate the resources that you find in your research by answering the list of questions below to determine the purpose, authority, and reliability of each source:

1. What is the purpose or motivation for the source? (e.g., educational, commercial, entertainment, or promotional.)
2. Based on your knowledge, is the information fact, opinion, or propaganda?
3. Who is the intended audience for the information, and how is this fact reflected in the organization and presentation of the material?
4. Is the author identified?
5. What is the author's background? (e.g., experience, credentials, and occupation, and has he or she published anything else on the topic?)
6. Does the author cite his or her sources?
7. How current is the publication?

You can find examples of useful and credible sources by examining the resources used to develop this curriculum (listed at the end of each section), in the plant info guide, and in the Year of Foraging infographic. You can also find some good general references on foraging and plant identification listed below. This same list can also be found on the references page of the Foragable Community website.