Setting the Table for Wildlife

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Forest wildlife species, like all living creatures, have basic needs which their environment, or habitat, must provide for their continued survival. For most species, these needs include food, water, cover, and adequate space for the activities of their daily lives. All of those needs must be met to support wildlife and the smaller the area required to meet those needs, the less energy expended in search of them and the less the animal is exposed to potential predators and other enemies. It is important to realize that any of the habitat requirements listed above can limit wildlife populations both in quality and quantity.

For instance, supplying plenty of food without adequate cover or vice versa achieves little. Wildlife populations can be limited by the habitat characteristic in shortest supply. This article is an attempt to provide some general information on managing Southeastern forest habitats to meet one of the basic needs, food.

Some foods are particularly valuable to wildlife because of their nutritional quality, others because of the time at which they are available, and others because they are available in great quantity. Considerations of food value must include these characteristics: (1) nutritional value; (2) palatability; (3) availability; (4) seasonality; (5) familiarity; (6) dependability; (7) physiological needs of the animal; and (8) feeding habits and needs of the targeted species or group of species. Each of these concerns deserves a brief discussion.

Nutritional Value

The importance of nutritional value is almost intuitive, i.e., the higher the nutritional value the better the food. There are some nuances, however. Some foods, like legumes, can "fix" atmospheric nitrogen

Japanese honeysuckle is an excellent deer browse. Fertilized patches can produce as much or more nutritional value than intensively managed food plots.

and are high in protein. Others, like acorns, are rich in carbohydrates. Longleaf pine seed is high in fat content. Each of these diet items is important, more so in some seasons and animals than in others. Different parts of plants are more nutritious than others. Plants tend to concentrate nutrients in the growing tips of branches and tops, providing the greatest benefit to browsers at those points. Nutrient content is highest, then, in the spring and early summer when plants exhibit the greatest growth. Root crops, such as chufas, are most nutritious in the fall and winter, when the tops have stored reserves in the tubers for next year's rebirth. Nutritional level of plants can be increased measurably by fertilization and somehow, wildlife can recognize and exploit that increase. Deer likely tell by tasting everything in reach and selecting the most succulent and nutritious for special attention. Young pines are not usually selected for browsing by deer, but hungry deer will feast on pine seedlings fresh from a fertilized nursery bed. Fertilizing natural foods such as Japanese honeysuckle increases their attractiveness and value to wildlife.

Palatability

No matter how nutritious a food might be, it is of little value if it is not palatable. Once the branch tips of woody plants "harden" into their woody form, they are little more palatable to browsers than a wooden pencil. Green persimmons are edible, but hardly palatable, an important distinction that many rural residents learn early in life. Fruits such as buckeye are unpalatable to most if not all wildlife species, and mockernut hickory is so-named because of its spare meat compared to the thickness of its shell and the difficulty a squirrel would have getting into it. Plants such as devil's-walking-stick, Aralia spinosa, and sensitive brier protect themselves from browsers with prickles and spines on every surface.

Fertilizing native vegetation can pay off in increased production of succulent growth, soft or hard mast, and higher nutritional value.

Availability

The availability of food is also an important consideration for wildlife managers. If the growing tips of important browse species such as Elliott's blueberry are out of the reach of deer, then they have no value to them. Gopher tortoises are grazer/browsers, feasting on succulent grasses, legumes, fruits, and other herbs. Unfortunately, their grazing strata is limited in height to about 18 inches. Anything above that is just out of reach and unavailable. A forest manager interested in maintaining gopher tortoise habitat must do something to keep the food down where the tortoises can get to it. Prescribed fire is one method to achieve this.

Seasonality

The importance of the seasonality of food supplies is that although foods come and go with the seasons, wild animals must eat all year round. Managers should consider the food supply for desired species throughout the year as individual foods wax and wane, and plan to have adequate foods present at all periods. This may require supplemental plantings or feeding in some cases.

Familiarity

Foods are often sorted by wildlife biologists into three groups categorized as preferred foods, staples, and fillers. As implied, these foods are graded by their attractiveness and value to wildlife. Preferred foods are the first to go, used out of proportion to their presence in the habitat. Staples are just that, the meat and potatoes of an animal's diet. Fillers are used during times of stress and are consumed at a much lower rate than their availability might suggest. Gallberries are usually considered a filler for deer. Plants may fall into these categories differently from one region to another. For instance, American beautyberry and yaupon are important browse species for whitetails in Texas, but little used in South Alabama. Sometimes deer can remove preferred foods from the habitat entirely, leading to misperceptions about value and selection. Blueberries, huckleberries, green brier, and blackberries are highly utilized by deer in much of the South, but that may only be because the more highly prized foods are already gone. Unlike other wildlife species typically managed for, deer have the potential to degrade the quality of their own habitat through overpopulation and over-browsing. Because seed sources are gone, the ability of those habitats to restore themselves, even if deer populations are controlled, may be compromised and require very long recovery periods.

Blackberries and dewberries can be made more productive with fertilizer and exposure to the sun. Productive patches can supply nesting birds like turkeys and quail with both food and moisture.

Dependability

Some food plant species, such as American beech and longleaf pine, are excellent in terms of palatability and nutritional level, but are notoriously undependable. Beeches produce bumper crops on the average of about every five years and longleaf every six years. When this happens, they are excellent food crops. White oaks can be spotty producers. Red oaks are much more reliable producers, but white oak acorns are more nutritious and palatable. Savvy managers keep a mix of white oaks and red oaks in their forest stands to buffer those "off" years. Sandhill oaks such as turkey oak and bluejack oak are sparse but dependable mast producers and are invaluable in those harsh habitats because they are the only game in town.

Physiological Needs of the Animal

The food needs of various wildlife species can change with the season. Preparing for winter requires fat reserves. Feeding young requires a different kind of diet for nursing females. Nurturing a maturing embryo places nutritional demands on pregnant females that are different than those at other times. The vast majority of the diet of young turkeys and quail is made up of insects. That's because insects are high in protein and these chicks are building body mass at a rapid rate. Prudent managers provide productive "bugging grounds" rich in insects for these fast growing chicks.

Feeding Habits and Needs of the Targeted Species

Finally, individual species have different needs throughout the year and throughout their lives. Turkeys, for instance, need rich bugging habitat for brood rearing; hard mast for fall and winter foods; soft mast and seeds during the summer and early fall; and durable, hardy seeds for late winter. Habitats that can supply all those foods, nesting cover, and roosts will support healthy turkey flocks.

Managing foods for wildlife requires attention to the details outlined above. Many managers want to either "buy" their management at the farm cooperative or rely on food plots to maintain nutrition and healthy populations. That is typically a false hope. Managing natural foods is less expensive and, in the long run, more effective. Identifying valuable foods

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requires a little knowledge about the species being managed for, but there are many overlapping food habits among wildlife species. For instance, soft mast producers such as blackberries and blueberries are used by a variety of species, both for their fruits and as a source of browse. Opening canopies by removing some trees encourages these species, and they will respond to fertilizers. Plants such as blueberries and huckleberries do best in slightly acidic soil conditions, so these plants respond poorly to liming. Forage quality is determined to a large degree by soil fertility and the ability of plants to take up and utilize those nutrients. Much like traditional agriculture, managing natural foods to their potential requires knowledge about soils and their needs. Recognizing valuable plants such as soft and hard mast producers - persimmons and white oaks, for example - and managing them through protection and giving them room to grow can pay the same benefits as planting a sawtooth oak or other exotic species.

Most wildlife species, with the possible exception of gray squirrels, benefit from a habitat that contains grasses and other herbaceous plants on the forest floor. This requires sunlight to the forest floor and frequently, fire to control the woody shrubs and tree saplings that might shade it out. Fire also prepares a good seedbed for these valuable plants. An additional benefit of fire includes the top-killing of woody shrubs, causing resprouting from the root collar. These sprouts are nutritious, palatable, and available for browsers. Many legumes, valuable seed and browse producers for a wide variety of wildlife species, are stimulated to germinate by fire and their hard seeds pioneer into burned areas quickly. Similar results can be achieved by the judicious application of selective herbicides. For instance, compounds that contain imazypyr, such as Arsenal, are excellent at controlling many woody species without damaging legumes. Chemicals containing hexazinone as an active ingredient, such as Velpar, have little effect on beautyberry or Vaccinium species, including blueberries. Matching the chemical used to the species to be controlled is a valuable tool in prescription, but it may be just as important to choose herbicides to spare the plants you want left. There are more plants that are valuable to wildlife as foods than plants that are not. Identifying key native plants and favoring them in forest management requires some homework, field observation, and effort.

Managing food sources for non-herbivores still largely comes back to managing vegetation. Game and songbirds that feed on insects benefit when insects respond to favorable changes in vegetation. Managing ragweed fields for quail works because the fields are high in insects, not because of ragweed seed, a valuable food in itself. Managing for predators means managing for prey species which, in turn, usually means managing vegetation. Managing for bobcats and foxes means managing for rodents and rabbits, and that entails managing vegetation for foods for those species.

Many managers use food plantings of small grains, clovers, and other annuals to get wildlife through hard periods. Although these plots undoubtedly can provide foods with increased nutritional value, their primary value is likely to be their ability to attract wildlife to the gun, camera, or binoculars. Remember, wildlife must eat year round. Feeding them well in the winter doesn't substitute for good nutrition the rest of the year. Perennials like shrub lespedezas, autumn olive, and sawtooth oak serve much the same purpose. Few landowners have the wherewithal to provide enough supplemental plantings to truly affect overall wildlife herd or flock health over the long term.

Direct supplemental feeding has gained in popularity and shows some promise to improve vigor of individual animals. Costs of feeding programs are relatively high, but not much more than planting food plots. A major difference, however, is that it is illegal to hunt over food, considered "bait" in current regulations. Consequently, supplemental foods such as bulk soybeans, corn, or high protein pellet foods cannot be supplied year round on hunted properties. In fact, they must be removed at the times that wildlife may benefit the most from them. Critical periods include the late summer when soft mast is gone, succulent browse has hardened off, and before acorns fall; and late winter when acorns are gone and before the spring green-up. Attention to wildlife foods during those periods may be very important to the overall health of resident and migratory wildlife populations.

Managing forestland for timber and wildlife resources is not only possible, it is easily accomplished. Maximizing both is more difficult but the tradeoffs are usually minor in all but the most intensive schemes. Good managers must be observant and able to adapt to changing conditions. Each property has its own unique potential determined by soils, climate, past management history, landowner's objectives, and landowner's resources. Reaching that potential is a function of the landowner's commitment, knowledge, and patience.

Legumes, like this butterfly pea, provide nutritious forage for browsers as well as high protein seeds for other wildlife. Most native legumes respond well to disturbances like fire, disking, and thinning.