

Extension Workgroup

GROWING FORAGE CROPS FOR WILDLIFE

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Forage crop agronomists typically spend most of their time working with livestock producers. Most have spent little time working with people who are interested in growing forage crops for wildlife, or in seeking solutions to problems such individuals may have. Numerous forage crops adapted in the Southeast offer various benefits in production of domestic animals (Ball, et al., 2002), and many of these same attributes are also valuable in wildlife settings. Furthermore, the attitudes of many wildlife managers are changing, and their desire for knowledge of forage crops is on the rise. Thus, opportunities for agronomists to work with wildlife enthusiasts are increasing.

Wildlife Enhancement As A Fringe Benefit

Wild animals have always felt free to visit pastures and hayfields anytime they are planted within the geographical area in which they live. In fact, some wild animals even alter their range in order to access certain forage plantings more easily or more frequently. Livestock and hay producers regularly have the experience of seeing birds and animals of many species on their farms.

However, the extent to which forage crops planted for livestock or hay production are used by wildlife is almost certainly underestimated by most producers. After all, wild animals are shy and secretive and generally prefer to avoid being near humans. Many are primarily or exclusively nocturnal, and thus are active only at times when humans are not generally present.

In the Sacramento Valley in California, wildlife biologists conducted studies of alfalfa fields to determine the extent of wildlife activity within them. They found that of 643 resident and migratory amphibians, birds, mammals, and reptiles known to occur in that area, 162 species (about 25%) were regularly using alfalfa fields to some extent, and about 10% percent were using alfalfa fields extensively (Kuhn, et al., 1996).

In recent years agriculture has been criticized by some environmentalists who believe that virtually everything associated with food production has negative environmental consequences. In reality that is not the case. Forage crops make numerous important contributions to wildlife and to the environment even when planted primarily for livestock or hay (Putnam, 1998). Various wildlife species have widely differing requirements, of course, but in some settings such as areas in which cities are encroaching on agricultural land, there would be little habitat suitable for many types of wild animals if there were no forage crops present. Thus, a forage/livestock producer can consider that wildlife enhancement is a fringe benefit of his forage production efforts.

Growing Forage Crops Specifically Or Primarily For Wildlife

Wildlife management has evolved greatly in recent years. Twenty-five years ago it was not particularly common practice in the Southeast for any type of plants to be established strictly for wildlife. When such plantings were made, they usually consisted of cool season annuals (often small grain and/or annual ryegrass). These species are relatively easy to establish and require little management after establishment. The main, and often the only, objective for making such plantings was usually to attract game animals during hunting season in order to increase the likelihood of hunting success.

Things have changed. Today many wildlife managers are quite sophisticated in their management approaches. An increasing number are thinking about the long-term implications of management practices, including the importance of striving to provide optimum nutrition throughout the year. There is more awareness that nutrition can improve the health of wild animals, increase their size and weight, as well as increase wildlife populations. Furthermore, while most plantings for wildlife are still made by hunters or by people who are hired by hunters, there is also increasing interest in non-game wildlife by non-hunters as well as by hunters. Many different species of plants are now regularly planted for wildlife, including some such as alfalfa that require considerable attention to detail for good results (Ball, 2005).

Why Consider Planting Forage Crops For Wildlife?

The answer to this question was touched upon in the introductory paragraph of this paper, but a more detailed explanation should be helpful. There are numerous wildlife species as well as many species of forage plants. Not surprisingly, certain plants offer different benefits to various species of wild animals or are of much more value to some wild animals than to others. Hunters are responsible for most wildlife plantings being made, so the emphasis in this discussion will be on benefits to game animals or to hunting enthusiasts. As viewed from the perspective of a wildlife manager, highly desirable traits various forage crops may offer can be put into a few main categories.

*Persistence- Annuals are often used in wildlife plantings mainly because many annual species offer the advantages of good forage quality and rapid growth. Some annuals can be managed for reseeding, but many wildlife enthusiasts prefer to use perennials when possible. The expense, the establishment risk, and especially the time and effort involved in regularly planting annuals is something they would rather avoid.

*Nitrogen Fixation- Wildlife managers like the fact that legumes can symbiotically fix nitrogen in association with *Rhizobium* bacteria. However, in the case of wildlife enthusiasts, appreciation of this unique trait of legumes is not so much due to avoidance of the expense of applying nitrogen, which is often an important incentive for of many livestock or hay producers. Rather, wildlife managers are more likely to appreciate legume nitrogen fixation mostly because it means that periodic application of nitrogen is one less management practice to be remembered and accomplished.

*Forage Quality- The nutritional benefits forages provide to livestock are likewise of benefit to forage-consuming wild animals. Whitetail deer is the wild animal for which plantings are most commonly made in the eastern United States, and knowledgeable wildlife managers who are interested in deer want to establish plants that produce forage with a high level of digestibility and a high protein content. Plants such as alfalfa that contain high levels of calcium and phosphorus are of special interest because these nutrients are important in antler development (a major selling point to deer hunters).

*Insect Attractant- Forage crops, especially forage legumes, often can be an excellent insectory. In a study done near Ithaca, New York, entomologists identified 591 insect species in a single alfalfa field (Pimental and Wheeler, 1973). For many species of birds, including game birds such as quail and wild turkey, availability of a good supply of insects is of critical importance, especially when the birds are young. Many bird species also benefit from consuming high quality green leaf material.

*Seed Production- For many birds including quail, doves, ducks, and wild turkey, seeds comprise an important part of the diet. The seed produced by some plants commonly grown for forage such as browntop millet, annual lespedeza, corn, and sorghum are of great value in wildlife plantings. Other seed-producing plants that are widely used to enhance bird populations or to attract birds for hunting purposes include sunflower, sesame, Florida beggarweed, ragweed, and proso millet. Plants such as partridge pea and shrub lespedeza are especially valued because the seed they produce do not weather easily and thus do not deteriorate very quickly over time.

*Long Period Of Forage Availability – Bridging nutritional gaps is of critical importance in wildlife management. Most wildlife species prefer a varied diet, and the relative preference for various plants can vary over time. Thus, having high quality forage and/or an ample supply of seed available for wildlife over a long period of time is a major advantage. Ensuring that there will be food available during drought periods or other times when food is less readily available is especially important. For example, many wildlife managers no longer only plant winter annuals. The reason is that they now realize that having high quality forage available during summer and autumn helps ensure adequate milk production by does, increases the likelihood of rebreeding, increases deer weights prior to winter, and bodes well for antler development.

*Potential To Attract Wild Animals Or Otherwise Influence Their Behavior- The concept of attracting animals to increase the likelihood of hunting success was mentioned earlier. In addition, food plots can be used as a tool to help keep wild animals in an area where they are desired (perhaps simply for viewing enjoyment of a landowner). A good example is that wild turkeys, which otherwise may range over a large area, tend to wander much less if chufas are included in food plots. To a degree, wildlife plots can sometimes even be used as a tool to encourage wild animals to stay away from areas where they are **not** wanted. For example, a planting of forage species that are highly attractive to deer on a side of a large farm or ranch that is a long way from a paved road can decrease the likelihood of collisions with motor vehicles.

*Cover- Although many native or indigenous plants provide cover for wildlife as well or better than many forage plants, this is another benefit to wildlife that can be mentioned. Forage plantings can be especially attractive to small animals such as rabbits, and for young game birds including quail or wild turkeys that simultaneously need cover as well as a high level of nutrition.

Unique Aspects Of Working With Wildlife Enthusiasts

Site selection is always important in successful establishment of a plant stand, but location of a suitable site for a wildlife planting deserves special mention. Plantings made specifically for wildlife are often located in remote areas, so ease of access with planting and fertilizer application equipment should be a consideration. Though locating plantings close to trees or other heavy cover may provide advantages to wildlife, most forage crops will not be productive in shady areas or in close proximity to tree roots.

Also, wildlife plantings are often made in areas that have not been in regular agricultural production, and thus may need more attention than most sites where forages are planted on farms. Thus, the desirability of planning ahead and starting early to get a food plot in proper condition (taking soil tests, applying lime, eliminating roots or undesirable species, etc.) is especially important. Failure to provide an adequate soil pH and proper soil fertility is a common reason for poor performance of wildlife plantings.

Most other agronomic considerations associated with establishing plantings for wildlife are the same as for growing forages for livestock. For example, the species planted should be suited to the soil type and site. In addition, lime will usually need to be applied several months before planting to raise the soil pH to a suitable level, any needed fertilizer nutrients should be applied in accordance with a soil test, the seed should be planted at the proper time, rate, and depth, etc.

Although a wildlife enthusiast will be pleased with a beautiful, thick forage stand, stand density is actually not as important in wildlife plantings (especially in older stands) as is the case when plantings are made for livestock or for hay production. Although mowing to reduce shading or making a herbicide application may sometimes be desirable, as long as volunteer grasses or volunteer are not offering excessive competition, in many cases it is not particularly harmful to have such plants growing along with forage crops in a wildlife situation.

If the nutritional needs of forages are met and excessive competition from volunteer plants is prevented, the life of a perennial forage planted for wildlife can be as long, and may even exceed, that of a planting made for livestock. Although wildlife populations vary greatly, in wildlife plantings there may be less season-long defoliation stress than occurs when forage crops are planted for hay or to provide pasture for livestock. Also, with a planting of a perennial forage crop made specifically for wildlife, there is usually less urgency about making a decision to replant if stands begin to thin. A fairly low percentage of a good quality perennial forage crop in a mixture with volunteer species may make a perfectly acceptable wildlife food plot.

While many plants wildlife enthusiasts use are forage crops, some are not. Chufa, Japanese honeysuckle, sawtooth oak, Florida beggarweed, partridge pea, sesame, ragweed, and sesbania are examples of plants that would not be planted for livestock. Thus, if a forage crop agronomist begins working frequently in the wildlife area, it behooves him or her to learn about the advantages, disadvantages, and management of these and other plants commonly planted for wildlife but not for livestock.

Final Thoughts

There has long been much interest in wildlife among a significant portion of the human population, and wild animals have always benefited from forage plantings made for livestock. However, interest in planting forage crops primarily or specifically for wildlife is clearly on the upswing at present. Evidence of this is that most people who have recently been involved in conducting meetings on wildlife topics report that such events often attract surprisingly large crowds. Wildlife managers are becoming more knowledgeable about the nutritional needs of wild animals, and they are increasingly willing exercise a higher level of management and to use more sophisticated approaches to meet those needs.

Though there is currently a heightened need for agronomic expertise in making plantings for wildlife, most agency wildlife biologists and university wildlife specialists have little or no agronomic training. A forage crop agronomist who has not worked much in the wildlife area may need to expend a bit of effort to learn more about wildlife needs and the challenges that wildlife managers face. However, once this has been done, he or she should then be in a good position to provide a valuable service to a segment of the population with which most have had relatively few dealings in the past.

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