

IMPORTANT PLANT SPECIES FOR QUAIL AND CATTLE IN SOUTH FLORIDA

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Bobwhite quail are one of the widest ranging game birds in the world. Their distribution overlaps with many habitat types from oak savannas to short-grass prairie, right on down to the rangelands of south Florida. They depend on an infinite number of plants to survive and reproduce. Too much emphasis has been placed on a handful of species when referring to quail management, and often food value is the only factor mentioned. The food value of a plant is only one habitat requirement. Cover for nesting and brooding are equally important requirements. In addition, the ability of a plant to attract insects and the growth structure of the plant are important.

Taking the abovementioned information into account, there are a number of grass and forb (broad-leaved herbaceous plants) species in south Florida that can be used as indicators of habitat quality for bobwhites. In addition, several of these grasses also dictate the quality of rangelands for cattle. There is overlap between good quail range and good cattle range, however, differences do exist.

The introduction of one species of grass has changed Florida's landscape forever, and that is bahiagrass. Bahia was introduced in the early 1900s as a pasture grass, and now covers approximately 3 million acres of what was once native rangeland. It has become a commodity in the form of sod, and is still readily planted for forage. Bahia makes decent cattle forage, however, under some environmental conditions (e.g., heavy rainfall) it will become of poor quality. Bahiagrass is not a component of quality bobwhite habitat. The growth structure of bahiagrass does not allow bobwhites access to bare soil that is needed for gleaning seed and dusting. The structure does not provide cover during heavy rainfalls and high temperatures; these things are highly detrimental to quail chicks. The competitive nature of bahiagrass creates a monoculture, and bobwhites need a diverse plant community.

Ranchers with bahiagrass pastures have limited management options. The primary management scheme would include rotational grazing, which allows other species of grasses and forbs to become present in pastures. The ditch banks and other odd areas of the ranch can be managed for bobwhite habitat by strip disking, roller-chopping, and herbicide application. A good rule of thumb would be to manage 7-10% of the area as bobwhite habitat. A second management scheme would be to eradicate bahiagrass and create a completely different habitat type. This option is the best for bobwhites, but not economically feasible for most ranchers.

Unlike "improved pastures" or "tame acres," native rangeland sites have numerous plant species that indicate quality bobwhite habitat and cattle forage. Species such as yellow indiagrass, lopsided indiagrass, eastern gamma grass, chalky bluestem, creeping bluestem, slough grasses, and switchgrass are highly

preferred by cattle and are very important to the habitat requirements of bobwhites. This is where the problem exists. The high preference level of these plants by cattle and the critical importance they have to bobwhites causes a tug of war between bobwhites and cattle. As you can imagine, cattle win every time they are allowed. However, the land manager has the ability to regulate or limit the amount of important grasses the cattle are allowed to consume. The key to managing sites with these grasses is rotational grazing and proper rest after fire or soil disturbance. Managing range in a manner that provides sufficient cover for bobwhites throughout the year is paramount. These grasses, with the exception of switchgrass, are not important food producers, but are important for nesting sites and brood rearing.

Forbs are equally if not more important to bobwhites than grass species. This group of plants provides cover, insect production, and plant foods for bobwhites throughout the year. Legumes do not seem to be as important in south Florida as they are other parts of the bobwhite's range. This is most likely a product of their low abundance. In vegetation surveys completed by field crews, a very small percentage of rangeland species composition were legumes (<1%). However, species such as partridge pea, milk pea, and beggarweed can add great value to bobwhite habitat and need to be promoted as much as possible. Other forbs, such as queen's delight, ragweed, blackberries, doveweeds and violet species, are very important food sources and insect attracting plants for bobwhites. These plants are often overlooked as important to bobwhites. Most forb species respond to disturbances in a positive manner. Fire, mechanical treatment, and light-moderate cattle grazing can promote these species, but too much of any of these will cause most forbs to be eliminated from the habitat. Historically, many of the forb species have been viewed as "weeds" by ranchers and farmers, but to bobwhites no such word exists. The stigma of having these plants present in pastures and rangelands often persuades land managers to control them via herbicide application or mowing. Those interested in having huntable quail populations should refrain from eliminating these plants from the landscape.

Bobwhites have four main habitat requirements that need to be fulfilled within their homerange; food resources, nesting cover, brood rearing cover, and escape cover. In south Florida I would add a fifth requirement, inclement weather cover. This type of cover is needed during heavy downpours and high temperatures. Plant species have to provide all of these requirements. Unlike cattle; bobwhites have no rancher to provide a safety net during hard times. As quail managers, we have to manage habitat to assure all necessities are met 365 days of the year, if habitat fails on any given day, that will be Mr. Bob's last.

Important Bobwhite Plants of South Florida

Poor Quality

Bahiagrass
 Bermudagrass
 Stargrass
 Limpograss
 Carpetgrass
 Cogongrass
 Tropical soda apple
 Smutgrass
 Most introduced forages



Fair Quality

Wax myrtle
Maidencane spp.
Eastern gamma grass
 Wiregrass
 Saw palmetto
 Queens delight
 Doveweeds (*Croton* spp.)
 Gallberry
 Runner oak
 Puffball fungus
 Love vine
Hypoxis spp.
 Slash pine
 Bay trees
 Violet spp.

Good Quality

Creeping bluestem
Switchgrass
Lopsided indiagrass
Yellow indiagrass
Beggarweeds
 Ragweed
 Blackberries
 Panic grasses
Slough grasses
 Partridge pea
 Longleaf pine
Chalky bluestem
Sesbania

****Species bolded are also high quality forage for cattle**

Average Crude Protein (CP) and Total Digestible Nutrients (TDN) for Selected Florida Forage Types

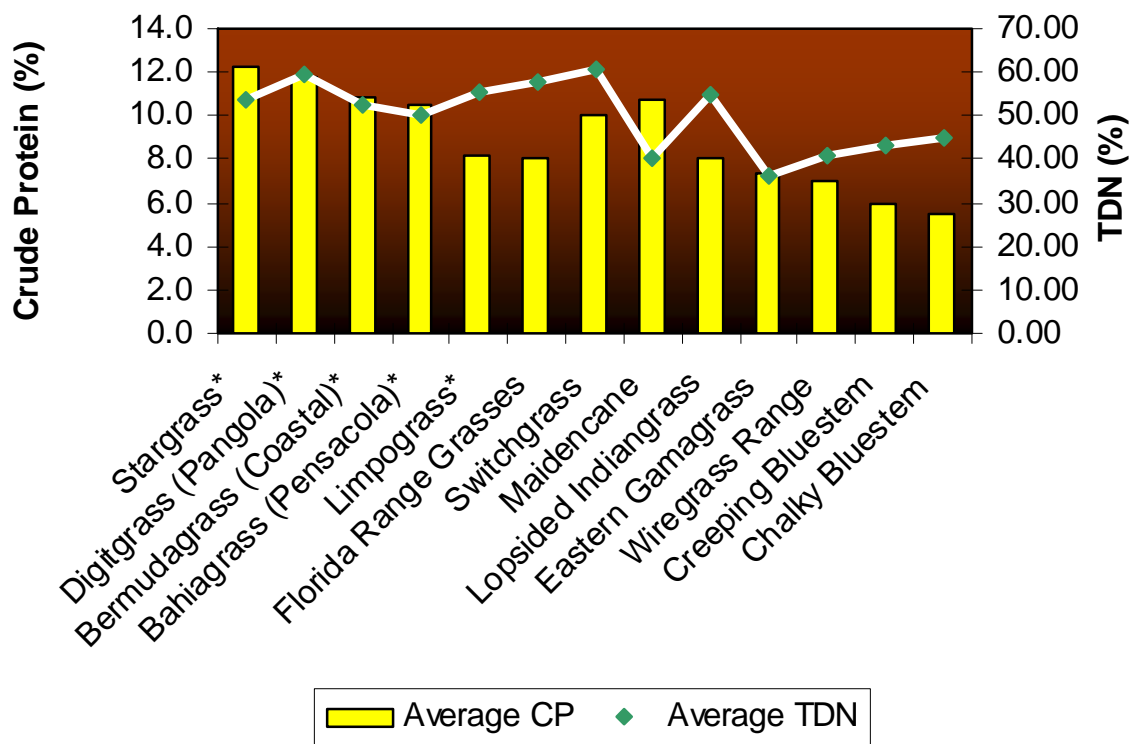


Figure 2. Average crude protein and total digestible nutrients for selected Florida forage types.

* These forages were fertilized. They were also analyzed during the growing season. The range grasses were analyzed at the end of growing season.

Special thanks to Mr. Pete Deal of USDA-NRCS for compiling this data

