

Vulnerability Ratings of Native Plants to Deer Browsing in the Texas Hill Country

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Class I – Highly Vulnerable Woody Plants

Kidneywood	Spanish oak	Texas mulberry	White honeysuckle	Littleleaf leadtree
Carolina buckthorn	Mountain mahogany	Rusty blackhaw	Texas sophora	Inland ceanothus
Shrubby boneset	Hawthorne	Possumhaw	Blanco crabapple	Elms
Snowbells	Mock orange	Black willow	Cottonwood	Bigtooth maple
Madrone				

Class II – Somewhat Vulnerable Woody Plants

Hackberry	Netleaf forestiera	Elbowbush	Ephedra	Bois d'arc
Roemer acacia	Western soapberry	Grapevine	Bumelia	Redbud
Virginia creeper	Old mans's beard	Greenbriar	Wild plum	Black cherry
Carolina snailseed	Cypress	Blackjack oak	SW bernardia	Roughleaf dogwood
Lacey oak	Chinquapin oak	Bur oak	Elderberry	

Class III - Low Vulnerable Woody Plants

Live oak	Flameleaf sumac	Littleleaf sumac	Button bush	Hogplum
Shin oaks	Skunkbush sumac	Feather dalea	Silktassel	Prairie baccharis
Post oak	Evergreen sumac	Ivy treebine	Bush croton	Peachbrush
Black dalea	Poison ivy	Indigobush amorpha	Dewberry	Sycamore

Class IV – Very Low Vulnerable Woody Plants

Redberry cedar	Algerita	Mesquite	Lotebush	Condalia
Blueberry cedar	Persimmon	Cenizo	Mountain laurel	Pricklypear
Javelinabush	Catclaw acacia	Catclaw mimosa	Whitebrush	Sacahiste
Yucca	Mexican buckeye	Fragrant mimosa	Little walnut	Wafer ash
Tasajillo	Wolfberry	Willow baccharis	Pecan	Pricklyash

Class I – Highly Vulnerable Perennial Forbs

Winecup	Dayflower	Showy menodora	Texas nightshade	Spiderwort
Snakeherb -	Bloodberry	Prairie acacia	Heath aster	Nodviolet
Primroses	Gauras	Penstemons	Green lilly	Illinois bundleflower
Four-o'clocks	Texas milkweed	Big red sage		Rain lilly

Class II – Somewhat Vulnerable Perennial Forbs

Engelmann daisy	Knotweed leafflower	Bladderpod sida	Carlowrightia	Prairie clover
Bushsunflower	Milkwort	Snoutbean	Texas bindweed	Wild onion
Maxmillian sunflower-	Tall goldenrod	Ruellia	Chalkhill woolywhite	Neptunia
Velvet bundleflower	Ground cherry	Wood sorrell	Trailing ratany	Sensitivebriar
Passion flower	Angel trumpet	Low menodora	Prairie paintbrush	Turk's cap
Hairy tubetongue	Sweet gaillardia	Rock daisy	Thyrallis	Skeletonplant
Milk pea	Scurf pea	Morning glory	Westen indigo	Dutchman's pipe
				Larkspur

Class III – Low Vulnerable Perennial Forbs

Orange zexmenia	Dutchman's britches	Daleas	Verbenas	Field ragweed
Fleabane	Evolvulus	Mexican sagewort	Bladderpods	False ragweed
Tall bush clover	Noseburn	Pennyroyal	Crow poison	Wild mercury
Lazy daisy	Spreading sida	Perennial spurges	Greenthread	Copperleaf
Wild buckwheat	Indian mallow	Sticky selloa	Spiny happlopappus	Puccoon
Chicktheif mentzelia	Globemallow	Flame flower	Western ragweed	Windflower
Rock lettuce	Whitwort	Bluets	Dwarf aster	Snapdragon vine
Gayfeather	Sunflower goldeneye	Spiderling	Twinevine	

Class IV – Very Low Vulnerable Perennial Forbs

Mealycup sage	Dogweed	Milkweeds (most)	Silverleaf nightshade	Horsenettle
Queen's delight	Goldaster	Broom snakeweed	Prairie coneflower	Curlycup gumweed
Ratear coldenia	Plains zinnia	Desert holly	Horehound	Frostweed
Threadleaf groundsel	Spikemoss	Twinleaf senna	Germander	Tetraclea
Tetranuris	Dogbane	Lindheimer senna	Buffalogourd	Frogfruit
Grassland croton	Leatherweed croton	Milkvines	Texas salvia	White snakeroot
False nightshade	Skullcap	Milfoil	Ferns	Rushpea

Explanation of Vulnerability Ratings

This listing of many Hill Country plants is intended to help provide basic knowledge of which plant species may be most vulnerable to heavy grazing and browsing by white-tailed deer in the region. Other animal species, such as goats, sheep and exotic wildlife also consume browse and forbs. In general, a plant that is highly preferred by white-tailed deer will also be highly preferred by these other ungulates. In many cases, a combination of deer and other animals coexist together, and the cumulative effect of all grazing and browsing must be considered.

This list does not contain grasses and grass-like plants since these are generally not consumed by deer in large amounts and are not considered vulnerable to damage by deer grazing.

This listing is based on the widely accepted fact that ungulates are selective in their feeding habits. Deer, sheep, goats and other similar animals exercise preference and selectivity in their feeding. Plants that are more palatable are selected before plants of lesser palatability. Where animal numbers are high, this selectivity, over time will result in the over-use of the more preferred species. This gives a competitive advantage to the less palatable plants that thrive at the expense of the more preferred species.

Palatability in plants is somewhat subjective and is influenced by many factors including leaf size, leaf texture, tenderness and succulence, the presence of spines or thorns, and the presence of aversive chemical compounds in plants such as tannins, alkaloids and phenolics which give leaves an unpleasant taste. A human analogy may be the preference most people have for steak >> brisket >> hamburger >> bologna.

As excessive leaf material is removed from plants repeatedly over the growing season, the health and vigor of that plant and root system begins to decline due to a lack of photosynthetic leaf surface. As plant vigor declines, plants begin to exhibit some visual signs of poor health. These include: smaller leaf size; fewer leaves; poor twig growth; hedging; browse lines; dead twigs and branches, increased susceptibility to insect and disease damage; increased susceptibility to drought; poor flowering; poor seed production; limited seedling establishment; inadequate recruitment; and premature death.

If some plant species are dying without replacing themselves in the plant community, this will result in the eventual loss of that species at the local level. If this continues over a large area over a long period of time, it can cause drastic changes in plant communities, and the simplification of species diversity.

Landowners and managers who are interested in maintaining or restoring high native plant diversity can use these listings to help interpret what has happened on their land. If Class I and Class II plants are rare or absent, or if they are growing only in the protective cover of brush piles or thorny plants, it is a sure indication of too many animals. Significant reductions in deer, exotics, sheep or goats is needed to help reverse the trend and begin to allow the preferred plants to improve in vigor, and eventually spread and increase. In some cases, deer proof fencing may be needed to maintain appropriately low deer numbers.

Definitions of Vulnerability Classes

Class I Plants are those which are considered to be the most palatable to deer, and highly preferred. Deer will seek these plants and graze or browse them to a much greater degree than their abundance in the plant community. Due to this preference, these plants are the most vulnerable to damage and death due to excessive use by deer. These plants are generally not reproducing well in areas with high deer numbers. Even where deer numbers are moderate, grazing and browsing on these species will often be severe. Old and mature plants may be present in varying amounts, but young plants are uncommon to non-existent.

Class II Plants are somewhat less preferred than Class I Plants, and somewhat more preferred than Class III Plants. Across much of the Hill Country where deer numbers are high, these plants exhibit heavy use and show the signs of poor vigor. Where deer numbers are moderate, these plants will often be in good vigor. In many cases, where Class I plants are absent or rare, Class II plants become the most preferred by default.

Class III Plants are generally not considered to be preferred in comparison to Class I and Class II plants. Therefore, these plants are not as vulnerable to grazing and browsing by deer. The abundance of these plants on many ranges indicates that they are generally faring well, even in the presence of high deer populations. Nevertheless, under very high deer populations and in the absence of many Class I and Class II plants, these Class III can become heavily grazed or browsed and subject to poor vigor.

Class IV Plants are the least palatable plants of the region. Deer do eat these plants, especially when other more preferred plants are in short supply, but seldom will they graze or browse these plants to the point of causing damage. Because they are the least preferred and least severely browsed, these plants are often the ones that reproduce most successfully and may become over-abundant.