

Evolution Of A Browse Database - A Global application.

Nancy A. Irlbeck^{1,2*}, M.M. Moore² and Ellen S. Dierenfeld³

¹*Department of Animal Sciences, Colorado State University, Fort Collins CO USA*

²*Denver Zoological Gardens, Denver CO USA*

³*Department of Wildlife Nutrition, Wildlife Conservation Society, Bronx, NY USA*

Browse - the new "buzzword" within zoological communities. Browse can include shrubs, trees, woody vines and stems, including various plant parts like berries and flowers. Browse is used for nutrient supplementation, behavioral enrichment and for some animal species it is life. Browse can also mean death to animals if a wrong plant or part is fed. With all of these parameters - good and bad - browse nutritive and management information has been collected on browse species known to "nurture" and "protect" animal collections. Browse databases have been compiled within zoological institutions throughout the United States, Europe, and countries worldwide. Information entered into a database usually centers around a "specific" country or region. Since plants grow better in some climates than others, it is difficult to use database information universally. Formats that would allow global application in browse utilization are critical. Landscape and seed industries recommend plantings based on plant hardiness. Plant hardiness is an index based on minimum temperatures and could be applied universally. For example, in the United States, plant hardiness zones range from 2 to 10, while in Europe they range from 5 to 10. A plant hardiness zone of 5 would include minimum temperatures of -20° to -10° F or -29.0° to - 23.5° C. Plant hardiness information is readily accessible on the Internet, and this index could be used to "begin" the process of developing a global browse database. It needs to be emphasized that there are many other variables involved in plant growth and resulting nutritive value of browse - humidity and rain fall, soil type, altitude and others. Plant hardiness is not the whole answer, but it is a first step in the development of a database that would allow entry of browse information for global application. Long-term goals for the browse database will be to incorporate it into the Global Food Composition Database proposed by the Conservation Breeding Specialist Group (CBSG) Working Group. The browse section of this Global Database will focus on identified variables utilizing current information technology. Fields to be incorporated into an Internet-accessible, intuitive-search database of browse samples include (minimally): taxonomy;

phenological characteristics; plant part(s); growth characteristics; geographic information and abiotic information including GPS coordinates (with a hyperlink to mapping capability); source (i.e. natural vs. cultivated); date of collection; list(s) of consumer species; nutrient data; bibliographical references; and links to other existent databases (i.e. medicinal, toxicological, human food, water quality). Specific details to be considered under these various fields will be discussed, along with implications for impacting and assessing nutrient quality of browse. Through creation of linked global databases with multi-users and contributors, we can begin to identify and fill knowledge gaps to allow us to better understand and meet the nutritional needs of animal species under our care.

Key words: plant forage; hardiness; information distribution