10760

Chihuahuan Stabilized Coppice Dune and Sand Flat Scrub

BpS Model/Description Version: Aug. 2020

Vegetation Type

Shrubland

Map Zone

25

Geographic Range

Chihuahuan Desert.

Biophysical Site Description

Coppice dunes and sandsheets found in the Chihuahuan Desert. Most moisture occurs during intense, short-duration, late-summer thunderstorms

Vegetation Description

Dominated by *Prosopis glandulosa* but includes *Atriplex canescens*, *Ephedra torreyana*, *Ephedra trifurca*, *Poliomintha incana*, and *Rhus microphylla* coppice sand scrub with 10-30% total vegetation cover. *Yucca elata*, *Gutierrezia sarothrae*, and *Sporobolus flexuosus* are commonly present.

BpS Dominant and Indicator Species

Species names are from the NRCS PLANTS database. Check species codes at http://plants.usda.gov.

Disturbance Description

Mesquite is topkilled by fire but resprouts and also regenerates from seed. FEIS has a mean fire return interval (MFRI) of 35-100yrs. Fire return interval (FRI) may be on the average more like 35yrs. McPherson identified a 7-10yr FRI in grasslands now dominated by mesquite. Shussman and Gori identify some desert scrubs as invaded desert grasslands when grasslands have an MFRI at 7-10yrs. Model 20yr MFRI based on compromise between 7-10yrs and minimum 35yrs in FEIS.

Fire Frequency

Fire interval is expressed in years for each fire severity class and for all types of fire combined (All Fires). Average FI is the central tendency modeled. Percent of all fires is the percent of all fires modeled in that severity class. Minimum and Maximum FIs show the relative range of fire intervals as estimated by model contributors, if known.

Scale Description

Large Patch.

Adjacency or Identification Concerns

See issues for possible effects of early extensive grazing, which may have impacts on identification.

Issues or Problems

Heavy grazing in late 1800s and early 1900s may have caused mesquite to increase. Christiansen agrees with model overall. The fire interval depends on amount, if any, of fine fuel to spread a fire. On WSMR, there is almost no fine fuel so the FRI is almost nonexistent except for the very rare shrub fire that has not yet been recorded on WSMR for this system.

Native Uncharacteristic Conditions

Comments

New model for this map zone. See disturbance section for discussion on FRI. Needs confirmation this is correct interval.

Succession Classes

**Mapping Rules**

Succession class letters A-E are described in the Succession Class Description section. Some classes use a leafform distinction where a qualifier is added to the class letter: Brdl (broadleaf), Con (conifer), or Mix (mixed conifer and broadleaf). UN refers to uncharacteristic native or a combination of height and cover that would not be expected under the reference condition. NP refers to not possible or a combination of height and cover which is not physiologically possible for the species in the BpS.

**Description**

Class A 26 Early Development 1 - Open

Indicator Species

Description

Early growth stage. Significant amounts of bare soil and dune conditions result in low percent canopy closure.

*Maximum Tree Size Class*  
None

Class B 74 Late Development 1 - Open

Indicator Species

Description

Mesquite becomes established, may establish clones.

*Maximum Tree Size Class*  
None

Model Parameters

Deterministic Transitions

Probabilistic Transitions

References

Bowers, J.E. 1982. The plant ecology of inland dunes in western North America. Journal of Arid Environments 5: 199-220.

Bowers, J.E. 1984. Plant geography of southwestern sand dunes. Desert Plants 6(1): 31-42, 51-54.

Comer, P., D. Faber-Langendoen, R. Evans, S. Gawler, C. Josse, G. Kittel, S. Menard, M. Pyne, M. Reid, K. Schulz, K. Snow and J. Teague. 2003. Ecological systems of the United States: A working classification of U.S. terrestrial systems. NatureServe, Arlington, VA.

Dick-Peddie, W.A. 1993. New Mexico vegetation: Past, present, and future. University of New Mexico Press, Albuquerque. 244 pp.

Schussman, H. and D. Gori 2004. An Ecological Assesment of the Bureau of Land Management's current fire management plans: Materials and recommendations for future fire planning. The Nature Conservancy, Arizona Chapter.

Muldavin, E., Y. Chauvin and G. Harper. 2000b. Vegetation of White Sands Missile Range, New Mexico: Volume I Handbook of vegetation communities. Final Report to White Sands Missile Range by New Mexico Natural Heritage Program, University of New Mexico, NM. 192 pp.

NatureServe. 2006. NatureServe Explorer: An online encyclopedia of life [web application]. Version 5.0. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: August 21, 2006).

NatureServe. 2007. International Ecological Classification Standard: Terrestrial Ecological Classifications. NatureServe Central Databases. Arlington, VA. Data current as of 10 February 2007.

Steinberg, P. 2001. Prosopis glandulosa. In: Fire Effects Information System, [Online]. USDA Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: http://www.fs.fed.us/database/feis/ [2006, August 21].