

Fire Ecology and Behavior
Exam # 1
February 23, 1981

- (40) 1. For each of the multiple choice questions below, all or none of the answers may be correct. Each choice will count as 3/4 point. Circle only the correct answer.
- a. High fire frequencies in grasslands are associated with a) rough topography, b) drouth years, c) high humidity, d) high temperatures.
 - b. Historically, fires were started by a) lightning, b) fire flies, c) cooks, and d) Indians.
 - c. The one dominant factor in maintaining grasslands is a) fire, b) climate, c) insects, d) competition from grass species.
 - d. Mortality of 50% or more can be obtained following one fire for a) homey mesquite, b) pricklypear, c) redberry juniper, d) western snowberry.
 - e. Coarse grasses which become more palatable after being burned include a) tobosagrass, b) buffalograss, c) little bluestem, d) rough festue.
 - f. Mixtures of blue grama and buffalograss require how many years for full recovery following fire during dry years? a) 1 year, b) 2 years, c) 3 years, or d) 4 years.
 - g. Vigorous sprouters after a fire would include which of the following shrubs? a) smoothleaf sumac, b) sand sagebrush, c) fourwing saltbush, d) leadplant.
 - h. The California prairie is deminated by a) purple needlgrass, b) annuals, c) Idaho fescue, d) bluebunch wheatgrass.
 - i. The following species of the Southern Desert Shrub are severely harmed by fire. a) Lehmann lovegrass, b) Wheeler sotol, c) burroweed, d) creosotebush.
 - j. Prescribed burning enhances growth of grasses in the Great Plains because of a) increased soil temperatures, b) lower bacterial activity, c) fertilization from ash, d) adequate soil moisture.
 - k. Mesquite trees are most tolerant of burning on a) shortgrass plains, b) upland sites, c) river bottoms, d) Nebraska sandhills.
 - l. Dominant grasses in the Aspen parkland include a) rough fescue, b) blue grama, c) little bluestem, and d) western porcupine grass.
 - m. Dominant trees in Nevada and Utah include a) Utah juniper, b) one-seed juniper, c) double-leaf piñon, d) single-leaf piñon.

(16) 2. True or False (Mark beside each statement)

- _____ a. In the Southern Desert mesquite trees have increased regardless of grazing intensity.
- _____ b. Black sagebrush grows on calcareous soils.
- _____ c. Black grama is very tolerant of fire.
- _____ d. Protecting cactus species in the Southern Desert from grazing will increase grass competition and reduce the number of cactus plants.
- _____ e. Large mesquite trees are easier to kill with fire in the Southern Desert than in the Rolling Plains of Texas.
- _____ f. Silver sagebrush grows on shallow soils with a restrictive B horizon.
- _____ g. Desert blackbrush is a sprouting species.
- _____ h. Resting cheatgrass ranges will gradually permit them to return to native bunchgrass ranges.

(6) 3. List the most important factors that interacted together during pre-European days to control the spread of juniper.

- a.
- b.
- c.

(38) 4. Short Answer Questions

- a. Relate the desired frequency of fire in grass-shrub communities to precipitation. Compare desired frequency of fire in a 10-inch ppt. zone to the desired frequency of fire in a 40-inch ppt. zone.

- b. Among the Opuntia species (Pricklypear, tasmajillo, and cholla), which is least susceptible to fire and which is most susceptible to fire?

- c. Frequently we talk about the necessity of a double treatment, for brush control, one of which is fire. Relate this to a mesquite-tobosagrass community and to an Ashe juniper community.

- d. How would you use fire to manage redberry juniper?

- e. Why are coarse-stemmed bunch grasses more resistant to fire than fine-stemmed bunch grasses?

- f. How would fire affect habitat for quail, mourning dove, and white-tailed deer in the Rolling Plains (Mesquite grassland)?

- g. Who was J. E. Haley?

- h. Kentucky bluegrass and smooth brome are two cool season species that differ in their susceptibility to fire. Which one is most severely damaged by spring burns and why?