Trend Study 11A-1-00

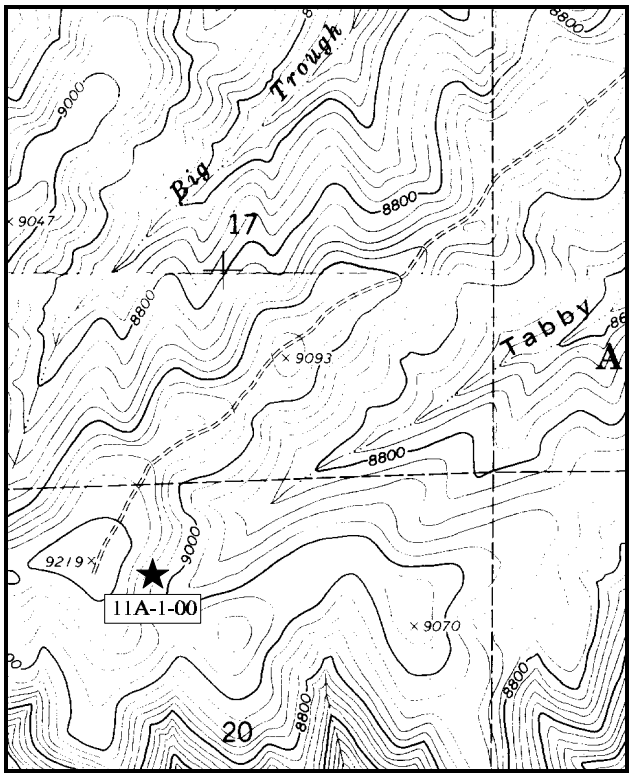
Study site name: Upper Cottonwood Ridge . Range type: Quaking Aspen .

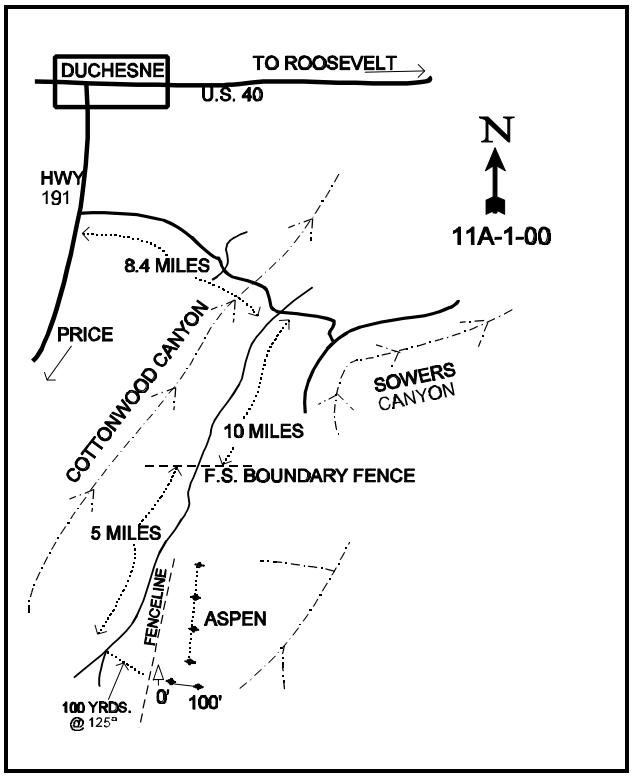
Compass bearing: frequency baseline 110°M .

Footmark (first frame placement) 5 feet, footmarks (frequency belts line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft).

LOCATION DESCRIPTION

From Duchesne, go south on Highway 191 towards Price for approximately 2.5 miles. Turn left and proceed southeast on the main road for 8.4 miles to a fork above Sowers Canyon. Bear right and drive up along Cottonwood Ridge for about 10 miles to the FS boundary fence From there, continue 5 miles to a faint fork on top of the ridge above the head of Tabby Canyon. From the fork, walk 64 paces bearing 110°M to the 0-foot baseline stake. The 0-foot stake is just beyond a lone conifer, on the edge of the aspens. The baseline runs SE into the young aspen stand. The 0-foot baseline stake has a red browse tag, #7088, attached.





Map Name: Lance Canyon Diagrammatic Sketch

Township 6S , Range 6W ,Section 20 UTM 4421962 N, 535263 E

DISCUSSION

Trend Study No. 11A-1 (15-1)

*** This site was not read in 2000. Only the site narrative is included here. Refer to the 1995 "Utah Big Game Range Trend Studies" report for maps and data tables for this site.

The Upper Cottonwood Ridge study samples summer range at an elevation of 9,160 feet. This study has an easterly aspect with a slope of 50%. Soils are fine textured and contain moderate amounts organic matter. Surface rock and pavement are scarce. Due to the steep slope, dense aspen with a thick shrub understory, cattle are not able to make much use of this site.

This small, uneven-aged stand of quacking aspen at the head of Tabby Canyon receives light to moderate use by big game. This allotment is grazed by 326 head of cattle from June 16 to October 15 as part of a two-unit deferred rotation system.

Vegetative aerial cover for the site was estimated at 47% in 1995. This is an increase from the previous years data as only basal cover was estimated. Litter cover estimates are similar and is estimated at 69%. No erosion is evident with a low percentage of bare ground (12%) because of the high amounts of protective vegetative and litter cover.

During the 1982 and 1988 reading, aspen density was estimated using three 1/200 acre density plots which estimated 3,933 plants/acre and 6,066 plants/acre for each year respectively. All aspen trees were classified as young with no apparent hedging in 1988. In 1995, point-center quarter data estimated 1,044 trees/acre with an average diameter of 2.4 inches. Aspen was mistakenly not counted in the shrub strips and not classified for form class and vigor in 1995, so no comparisons can be made with the past data. Serviceberry, not encountered on the density plots in 1982, yet estimated at 9,266 shrubs/acre in 1988, now have an estimated density of only 180 plants/acre. The high 1988 density estimate can be attributed to an abundance of young plants and a much smaller sample size. These young plants did not survive the drier years or the intraspecific competition. The serviceberry plants show only light utilization with an average height of 20 inches and crown diameter of 29 inches. The mountain big sagebrush population has shifted from a mostly young population reported in 1982 and 1988, to a mostly mature population in 1995. The plants have increased in average height to 19 inches and crown diameter to 25 inches. There is light use, if any, on the plants at this time. Very few of the plants were classified as decadent and the dead to live ratio is 1:36. Snowberry has shown a steady increase over the years and now has an estimated density of 9,040 plants/acre. Snowberry is stoloniferous and was counted as a plant if it was rooted within the sample area. An increase in this species would be expected because it is moderately shade tolerant, allowing it to out-compete the surrounding species as the aspen canopy closes. The size of the plants has stayed relatively stable with an average height of 17 inches and an average crown diameter of 23 inches. The Wood's rose density has also increased and is estimated at 6,180 plants/acre in 1995. It is a mostly mature, small statured population. Chokecherry is scattered throughout the site with an estimated density of 1,000 plants/acre. These plants average less than 2 feet in height with an average crown diameter of 1½ feet. Currently, all of these browse species show only light utilization.

Grasses comprise 9% of the total vegetative cover. Nearly half of the grass cover is contributed by a sedge. Bluebunch wheatgrass has the next highest cover for grasses. Other grasses include: Kentucky bluegrass, mountain brome, slender wheatgrass, muttongrass and Columbia needlegrass.

Thirty-three species of forbs were encountered with a *Penstemon spp.* having the highest cover value. Sum of nested frequency for perennial forbs has increased since 1988 and total quadrat frequency has increased since 1982. Most species encountered are perennials with very little chance of annual species invading this high elevation site.

1982 APPARENT TREND ASSESSMENT

This site is currently in good to excellent condition. It is unfortunate that deer herd unit 11A does not contain more acreage of similar vegetation. Herd unit productivity could be greatly improved. A key factor on this site is the apparent relative lack of livestock use. Other aspen sites further to the east and south have been heavily utilized and hence have rather depleted understories. Range trend is stable or perhaps even improving. A few conifers (i.e., white fir and douglas fir) are present but offer no immediate ecological threat.

1988 TREND ASSESSMENT

The increased density and frequency of a variety of herbaceous vegetation found in 1988 confirms the upward vegetative trend. The increase in forbs, a key management component, was not as large as the increase in grasses. The changes in browse density shown on the density plots were not supported by the frequency data, so are probably not significant. Conifer invasion is not a factor in this aspen community type.

TREND ASSESSMENT
soil - stable (3)
browse - stable (3)
herbaceous understory - up (5)

1995 TREND ASSESSMENT

Soil trend on this site is stable and in excellent condition. The herbaceous understory and litter, as well as the aspen canopy, provide good protection to the soil. There is abundant browse cover, but at this elevation, grasses and forbs will be preferred for most of the season over browse. Browse trend is stable. It should be noted that the large change in density for serviceberry was due to a combination of a very large number of young plants that were lost with the extended drought and the small sample size in 1988 which happened to be directly over a patch of small plants. This has been remedied with a much larger sample size and better distributed sample giving much more reflective estimates for browse that have clumped or discontinuous distributions. Density of conifers is low at this time. The herbaceous understory accounts for 39% of the vegetative cover (30% forbs and 9% grasses). Both forbs and grasses are diverse and fairly abundant. Sum of nested frequency for grasses and forbs has increased since 1988 with most species being relatively palatable to livestock and wildlife. Herbaceous understory trend is up.

TREND ASSESSMENT
soil - stable (3)
browse - stable (3)
herbaceous understory - up (5)