

Research Natural Areas

USDA Forest Service, Rocky Mountain, Intermountain, Southwestern and Great Plains States

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BUTTERFLY PEAK

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General Information

S.USNAHP*85

- Created: 1935
- Size: 1062 (acres)
- Elevation Range: 5200 - 7000ft
- Location: *Butterfly Peak RNA lies within the Santa Catalina Mountains, approximately 25 miles northeast of Tucson, Arizona.*

Site Description

Butterfly Peak RNA features extremely steep (greater than 60% slope) rocky scrub country in the Catalina Mountains. A wide variety of deciduous and evergreen tree species are present in various mixtures. Several conifers are present and include the Arizona pine, Chihuahua pine, pinyon, Douglas-fir, white fir and several junipers. Other woody species present are aspen, cottonwood, walnut, sycamore, maple, cherry, locust, dogwood, alder, live oaks and madrone. The steep and varied topography limits development of discrete forest stands.

Climate and Enviromental Information

Data not Available

Vegetation - Butterfly Peak

Interior Ponderosa Pine (SAF 237) Interior Live Oak (SAF 241)

A cooperative project of the

USDA Forest Service
Northern Region,
Rocky Mountain Region,
Southwestern Region,
Intermountain Region,
Rocky Mountain Research Station,
and the
Montana Natural Heritage Program

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R (L)- SW
Natural Areas
Coronado

Butterfly Peak Natural Area

Purpose

To preserve permanently in natural state an area containing one of the largest varieties of tree and shrub species to be found in any one place in the Southwest. Of the conifers there are Arizona pine, Chihuahua pine, pinyon, Douglas fir, white fir, and several junipers. Among the Broadleaf species are aspen, cottonwood, walnut sycamore, maple, cherry, locust, dogwood, alder, live oaks, and madrone. Shrubs and herbs comprise a wide range of species. The vegetation is in a splendid state of preservation, although there are evidences of deer damage. An area of this kind within reach of the University of Arizona should be especially valuable for botanical instruction.

Description of Area

Location

The area is on the north slopes of the Santa Catalina Mountains near Tucson, Arizona, in the Coronado National Forest. It comprises about 1,000 acres at the head of Alder Canyon. A Forest Service trail leads from Solider Camp into the area. The attached map shows the boundaries and topographic features.

Beginning at a point on the township line common to T. 11 S., and T. 12 S., R. 16 E., G. & S. R. M., in the unsurveyed territory but at a point that probably will be when surveyed, the $\frac{1}{4}$ corner on the S. line of Sec. 33, T. 11 S., R. 16 E.; on the 7,000- foot contour line, thence, in a northerly direction approximately 2 miles following the watershed between two forks of Alder Canyon to the main prong of Alder Canyon in what will be when surveyed, the NW/4, SW/4, NE/4 Sec. 28, T. 11 S., R. 16 E., thence following the main fork of Alder Canyon in a southerly direction approximately 2 miles to the intersection of the 7,000- foot contour, thence in a southeasterly direction, following this contour approximately 2 miles to point of beginning.

Physical and Climate Condition

The area occupies the steep northerly slopes at the bend of Alder Canyon. Elevation range from 7,000 feet down to about 6,000 feet. Small side canyons, benches, and covers provide a variety of aspects and soils. The soil is of granitic origin, porous and generally favorable for tree growth wherever it has a sufficient depth. The climate is that of the Douglas fir type or Canadian zone, cool and moist through moist of the year.

Forest Value

Although the area contains fine specimen of timber tree it has no commercial timber value because of inaccessibility. Broadleaf trees attain unusual development here. This is especially true of the maple, cherry and locust which usually are little more than bushes in the Southwest.

Agricultural Value

None.

Grazing Value

Although the area produces considerable forage, it is of more value for game than for domestic animals. Livestock have been excluded for several years. A few strays get in but their influence is negligible.

Mineral Value

As far as known, no mineral value exists.

Plan of Management

Because of the rough topography, logging is practically out of the question, but at any rate it should be prohibited. There is very little grazing by domestic livestock, a condition which should be maintained. Browsing of trees and shrubs by deer is showing evidence of assuming excessive proportions. This is a problem which must be met by a game management plan for the entire mountain. Excessive travel by the public is little to be feared. The recreational area at Soldier Camp on top of the ridge to the south will probably not greatly influence the natural area because few people care to indulge in the strenuous climbing required to travel off the trail. It is unlikely that any road will be built into the area, because of the steep grades that would be encountered, but nevertheless, provision should be made against any such development. The rough topography precludes such public uses as campgrounds and homesites. Hunting is now permitted and it should continue to be until the deer population is reduced to normal. If hunting of deer is ever prohibited, the trapping of predatory animals should also be prohibited.

Approved:

Forest Supervisor
Director, Southwestern Forest and Range Experiment Station
Regional Forester

Washington D.C., 1935

By the virtue and authority vested in me by the Reg. L-20 of the regulations of the secretary of agriculture relating to the occupancy, use, protection, and administration of the national forests, I do hereby designate as the Butterfly Peak Natural Area the land described in a report dated April 3, 1935, by _____: said lands shall hereafter be administered as a natural area subject to the provisions of the land regulation and the instructions thereunder.

Forester

BUTTERFLY PEAK NATURAL AREA

ABSTRACT

Butterfly Peak Natural Area consists of 1,000 acres (404 ha) of predominantly ponderosa pine forest on the northeast slope of the Santa Catalina Mountains. The site is at 32° 26' 30" N. Lat., and 110° 43' 30" W. Long., and contains a fairly wide variety of floristic elements due to variability of slope exposures and canyon drainages.

The site is on the Coronado National Forest and administered by the U.S. Forest Service.

Location

Butterfly Peak Natural Area (BPNA) is located in the Coronado National Forest on the northeast slope of the Santa Catalina Mountains, Pima County, Arizona. BPNA is 15.4 miles (24.6 km) north and 14.5 miles (23.2 km) east of City Hall in Tucson in T. 11S., R. 16E. Sections 28, 29, 32 and 33 and T. 12S., R. 16E. Sections 4 and 5 (See Sketch Map, Figure 1). By road, the site is approximately 35 (56.0 km) miles from downtown Tucson.

Access and Accommodations

BPNA is easily accessible from Tucson, Arizona via the Catalina Highway (= Wilmot Road in Tucson south of Speedway Boulevard) which is a two-lane paved highway that goes to the top of Mt. Lemmon. It takes about one hour to drive from Tucson's east side to Soldier Camp (See Map) where the Butterfly Trail leaves the Catalina Highway and passes through the southern edge of BPNA. Soldier Camp is about three miles beyond the Palisade Ranger Station and less than a mile beyond Bear Wallow Campground.

BPNA is accessible only by walking, it is not possible to drive closer than Soldier Camp. The Butterfly Trail begins at road's end at Soldier Camp and is a good, easy-to-follow trail. The trail does, however, go downslope fairly rapidly for about a mile before reaching the southern edge of BPNA and it is recommended that only persons in good physical condition attempt to hike into BPNA.

There are numerous camping areas along the Catalina Highway. Spencer Canyon and Bear Wallow Campgrounds are the closest campgrounds to BPNA. Both allow trailers, provide drinking water and have a combined total of 89 campsites. It is recommended that visitors to the Santa Catalinas obtain a visitors map of the Coronado National Forest from Forest Service Headquarters, 130 South Scott, Tucson, Arizona for further helpful information regarding camping and picnicking sites.

The City of Tucson offers a very wide range of commercial accommodations from campgrounds to luxury hotels and guest ranches. Very limited indoor accommodations are present at Summerhaven (See Map) although persons not interested in camping would probably do well to plan on staying in Tucson while visiting BPNA unless room reservations have been established at Summerhaven.

Climate

The climate of BPNA shows strong seasonal fluctuations in contrast with nearby areas at lower elevations. Summers are warm with daytime highs reaching into the nineties in the lower portions of BPNA and the mid to high eighties in higher portions. Nighttime summer lows drop into the forties and fifties. Winters are cold with lows often exceeding the freezing point. Conversely, midwinter high temperatures may be quite mild and pleasant on sunny days.

The average annual precipitation at nearby Palisades Ranger Station is about 30 inches per year. Most of the total falls during the summer rainy months of July, August, and September. For example, in 1971, a total of 30.79 inches was recorded at Palisades and 16.77 inches of this total occurred in those three months (U.S.D.C. 1971). A second peak of precipitation occurs during December, January and February with relatively dry periods separating the two rainy peaks. Snowfall is not uncommon during the winter months.

Topography and Landform

The elevational range of BPNA is approximately 1,400 feet, from 5,600 to 7,000 feet above sea level. The site is characterized by steep, forested hillsides and fairly deep, though not precipitous, canyons. Alder Creek, an intermittent stream, is the principal drainage and flows to the northeast through Alder Canyon and eventually to the San Pedro River.

The north slope of the Santa Catalina Mountains differs geologically from the south slope. The south slope is primarily a granite-gneiss complex while the north slope and BPNA has a complex mosaic of parent materials including granite and diorite, schist, limestone, quartzite, andesite, slate and shale. The parent materials of the BPNA region are primarily Dripping Springs and Troy Quartzite (See Dubois, 1959).

Biota

The predominant vegetation of BPNA consists of ponderosa pine (*Pinus ponderosa*) and its variety of associates which are determined, in part, by parent material and slope exposure (See Whittaker and Niering, 1968). At higher elevations (7,000 feet), north slopes are dominated by ponderosa pine, Douglas fir (*Pseudotsuga menziesii*), Chihuahua pine (*Pinus chihuahuana*), big-tooth maple (*Acer grandidentatum*) and Gambel oak (*Quercus gambelii*). Canyons and ravines at upper elevations have white fir (*Abies concolor*), Arizona alder (*Alnus oblongifolia*) and southwestern white pine (*Pinus strobiformis*) in addition to one or more of the formerly mentioned species. Braken (*Pteridium aquilinum*) is common on slightly drier hillsides dominated by ponderosa pine.

At lower elevations (approximately 6,000 feet) and on exposed limestone ridges at high elevations, the vegetation is quite different although dominated principally by ponderosa pine. The major vegetation of exposed ridges (e.g. Butterfly Peak) consists of ponderosa pine with silverleaf oak (*Quercus hypoleucoides*), Arizona oak (*Q. arizonica*), alligator juniper (*Juniperus deppeana*), hoary yucca (*Yucca schottii*), madrone (*Arbutus arizonica*) and buckbrush (*Ceanothus fendleri*). These same species are found at lower elevations of BPNA where the somewhat xeric pine-oak woodland becomes more dominant as indicated by the absence of maple, alder, white fir and white pine. For a more thorough discussion of the flora of the Santa Catalina Mountains, the reader is referred to Whittaker and Niering (1964, 1965 and 1968).

The vertebrate fauna of BPNA has its principal affinities with faunas of the Rocky Mountains and secondary affinities with the Madrean ranges of Mexico as is the situation with the flora of BPNA (See Lowe, 1964, p. 99). Reptiles that may be encountered at BPNA include Eastern Fence Lizard (*Sceloporus undulatus*), Short-horned Lizard (*Phrynosoma douglassi*), Great Plains Skink (*Eumeces obsoletus*), Gopher Snake (*Pituophis melanoleucus*), Sonora Mountain Kingsnake (*Lampropeltis pyromelana*), Southwestern Lyre Snake (*Trimorphodon lyrophanes*), Black-tailed Rattlesnake (*Crotalus molossus*), and Western Rattlesnake (*Crotalus viridis*). Of the preceding, the Lyre Snake, the Sonora Mountain Kingsnake and the Black-tailed Rattlesnake, have their principal distribution centers in Mexico (Stebbins, 1954).

Common breeding birds of BPNA and similar habitats have been discussed by Marshall (1957) and include species with primarily northern distribution and others with southern distributional maxima. Representatives of the Rocky Mountain fauna that probably breed at BPNA include Hairy

Woodpecker (*Dendrocopos villosus*), Western Flycatcher (*Empidonax difficilis*), Mountain Chickadee (*Parus gambeli*), Red-breasted Nuthatch (*Sitta canadensis*) and Hermit Thrush (*Catharus guttatus*). Breeding representatives of the Madrean ranges in Mexico include Arizona Woodpecker (*Dendrocopos arizonae*), Coue's Flycatcher (*Contopus pertinax*), Painted Redstart (*Setophaga picta*), Olive Warbler (*Peucedramus taeniatus*), Red-faced Warbler (*Cardellina rubrifrons*) and Mexican Junco (*Junco phaeonotus*).

The mammalian fauna likewise contains representatives of northern and southern groupings. Most notable of the southern mammalian forms that may occur at lower elevations at BPNA are the Coati (*Nasua narica*) and Javelina (*Tayassu tajacu*). Mule deer (*Odocoileus hermionus*), Cliff Chipmunks (*Eutamias dorsalis*), Deer Mice (*Peromyscus maniculatus*), Porcupines (*Erethizon dorsatum*) and Rock Squirrels (*Citellus variegatus*) and others may be found at BPNA.

Research History

Neither the author nor the officers of the Coronado National Forest (Lee Singer - Pers. Comm.) are aware of published research that has been conducted on and restricted to this site. Numerous studies (See Whittaker and Niering or Shreve, 1915, for example) have been conducted in the Santa Catalina Mountains and it is likely that one or more of them involved BPNA.

Maps and Aerial Photographs

Butterfly Peak is on the Bellota Ranch, Arizona Topographic Quadrangle, 15 minute series, although the specific site is not indicated on the map. The Coronado National Forest has published a two-part map of the entire forest which shows the precise location of BPNA (and other natural areas on the Coronado). A smaller map, published by the U.S. Forest Service, which also identifies BPNA, is included in a brochure dealing with the Coronado National Forest. The large two-part map is available for \$2.00 (\$1.00 per section) from the Coronado National Forest, 130 South Scott, Tucson, Arizona. The Forest Service has aerial photographs of the Santa Catalina Mountains although they are not produced for general distribution.

The Southern Arizona Hiking Club of Tucson has published a topographic map of the Santa Catalina Mountains which identifies the location of hiking trails within the range. Several such trails bypass BPNA and one more-or-less bisects BPNA.

BUTTERFLY PEAK RESEARCH NATURAL AREA

silverleaf oak - *Quercus hypoleucoides*
emery oak - *Quercus emoryi*
Gambel oak - *Quercus gambelii*
Rocky Mountain maple - *Acer glabrum*
boxelder - *Acer negundo*
alligator juniper - *Juniperus deppeana*
ponderosa pine - *Pinus ponderosa*
limber pine - *Pinus flexilis*
Douglas fir - *Pseudotsuga menziesii*
Arizona walnut - *Juglans major*
madrone - *Arbutus arizonica*
locust - *Robinia neomexicana*
mountain mahogany - *Cercocarpus betuloides*
ceanothus - *Ceanothus*
muscal - *Agave palmeri*
yucca - *Yucca neomexicana*
beargrass - *Nolina microcarpa*
pricklypear cactus - *Opuntia engelmannii*
snowberry - *Symphoricarpos oreophilus*
gooseberry - *Ribes*
pentstemon - *Pentstemon* sp.
columbine - *Aquilegia* sp.
yarrow - *Achillea lanulosa*
vetch - *Vicia* sp.
peavine - *Lathyrus* sp.
lupine - *Lupinus* sp.
turkey pea - *Thermopsis montana*
geranium - *Geranium* sp.
thistle - *Cirsium* sp.
senecio - *Senecio* sp.
paint brush - *Castilleja* sp.
needlegrass - *Stipa* sp.
bromegrass - *Bromus* sp.
pinedropseed - *Blepharoneuron tricholepis*
hollyhock - *Sphaeralcea* sp.
fleabone - *Erigeron* sp.
carex - *Carex* sp.

Abert squirrel - *Sciurus aberti*
javalina - *Pecari tajacu angulatus*
turkey - *Meleagris gallopavo merriami*
gray chipmunk - *Eutamias* sp.
coyote - *Canis latrans*

Tucson, Arizona,
April 3, 1935.

BUTTERFLY PEAK NATURAL AREA

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Forest Value

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Agricultural Value

None.

Grazing Value

Although the area produces considerable forage, it is of more value for game than for domestic animals. Livestock have been excluded for several years. A few strays get in but their influence is negligible.

Society of American Foresters
Committee on Natural Areas

Proposed Natural Area

Name of Proposed Natural Area Butterfly Peak

Location: State Arizona County Pima

Nearest Town Tucson

Nearest Federal, State or county highway US 80 and 89

Permanence Afforded Through What Means Regulation
(law, regulation, will, endowment, Board of Directors, etc.)

Name of Administration Unit Colorado Natl For.
(National Forest, national park, national wildlife refuge, State, university, etc.)

Listing of Timber Types on Area:

| <u>S.A.F. Type No.</u> | <u>Acres</u> | <u>Average Age</u> |
|----------------------------------|--------------|--------------------|
| <u>237</u> | <u>560</u> | <u>700</u> |
| <u>241</u> | <u>440</u> | <u>40</u> |
| | | |
| | | |
| | | |
| Barren, water, buffer zone, etc. | | |
| Total: | <u>1000</u> | |

Range in Elevation: Low 5200 Feet High 7000 Feet

Topography Steep & broken
(Level, rolling steep, broken, etc.)

Geology Granitic
(Volcanic, alluvial, moraine, etc.)

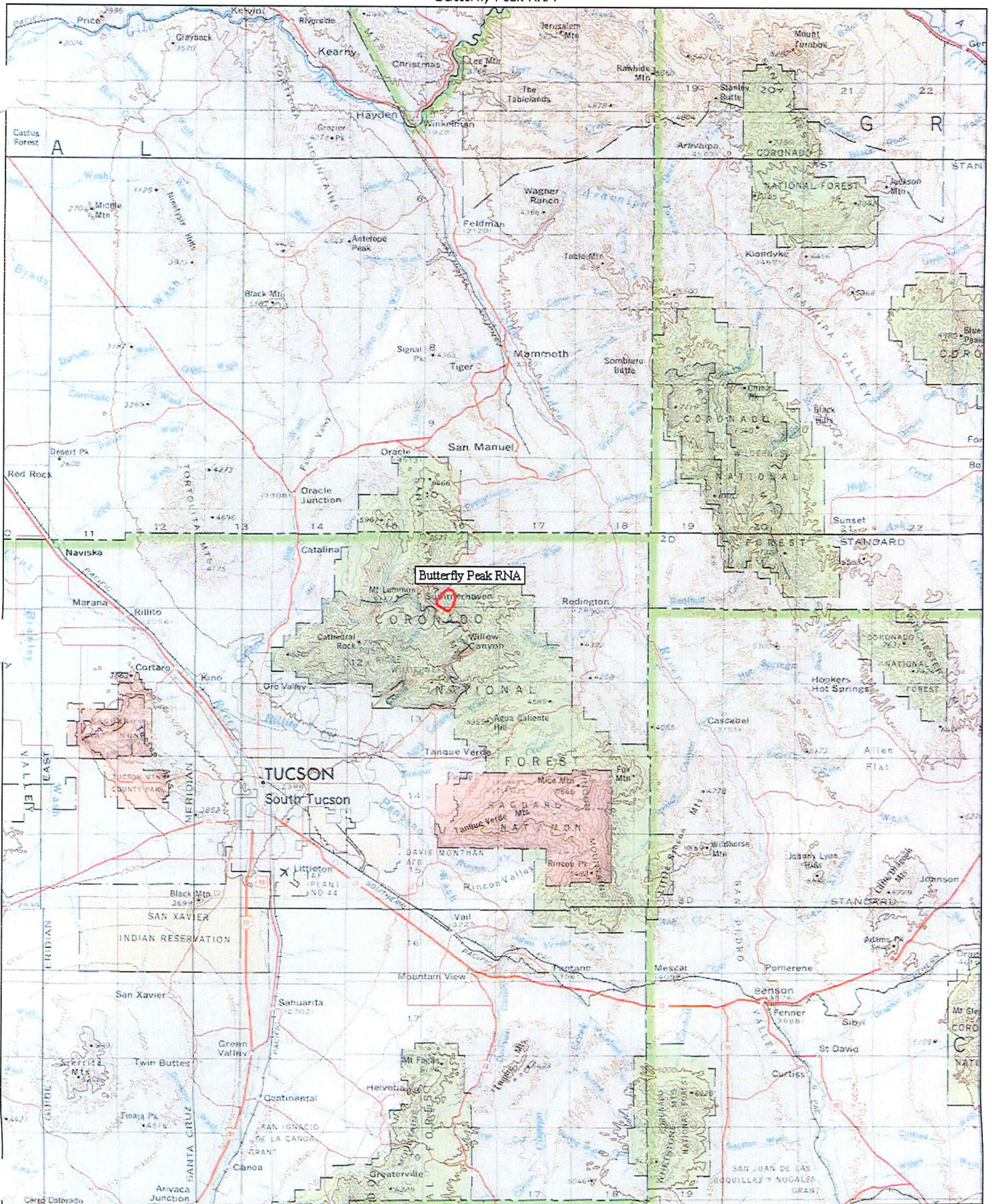
Average Height and Diameter of each major species:

| <u>Species</u> | <u>Average Height</u> | <u>Average Diameter</u> |
|-----------------------|-----------------------|-------------------------|
| <u>Ponderosa Pine</u> | <u>58'</u> | <u>22"</u> |
| <u>Doug fir</u> | <u>70'</u> | <u>28"</u> |

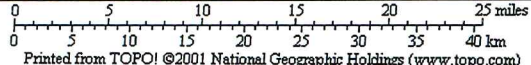
Submitted by _____ Title _____

Mailing Address For Supervision Date 2-10-69
Colorado Natl Forest
Box 551
Tucson, Arizona 85702

Butterfly Peak RNA



TN 11 1/2° MN



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