2/24/97

Camp Mather Research
224 Sixteenth Avenue
San Francisco, CA 94118

 3 September 1996

History - Hog Ranch and The Carnegie Institute of Washington D.C.

1.0 Context Statement:

Hog Ranch is the early beginnings of Camp Mather. Of all the early inhabitants of this area outside the Miwok and Piute Indians, this ranch has the richest history and probably most important to the development of Mather. It was a major keystone for the access to the Hetch Hetchy Valley, the establishment of the property lines, geological features, and the topographical development of Yosemite National Park and the Stanislaus National Forest.

The cast of characters who inhabited the ranch has been many and must be recorded.

2.0 Hog Ranch Homestead:

Pre- 1850 History

Little is known of the history of the area prior to 1900, except for the dating of the Hog Ranch building itself and the ownership of the property by D.G Smith and his brother Cyril C. Smith.

The Miwok were evident on the site over time because of the large mortar and arrow heads found over the years. There is also a hunting blind just North of the buiding over looking a ravine where animals could be easily hunted.

1856 - Initial Construction

Hog Ranch is the first known structure on Mather lands. This ranch house built in 1856 is one of few original structures existing in this portion of the Tuolunme County and may be the oldest structure owned by the City and County of San Francisco, since most of the City owned structures burned or were destroyed in the earthquake. The siding on the East side are hand split clap boards which probably date to the construction of the building. The interior logs are 8"x14" rectangular split walls stacked log cabin style and filled with mortar. Is is presently occupied and maintained by the Carnegie Institution.

The ranch building was the headquarters for the **Smith Sheep Company** who raised sheep and had a ram stud farm. There is no date when this operation started or ceased to exist.

1860 - D.G. Smith Claim to the Land

There is no record on who may have built the building at that time, although the ranch was recognized on maps starting in the later 1800's. When D.G. Smith acquired his Quitclaim in the mid 1850's or 1860's the building would have been on the site or had it built, because there is no record of the Quikclaim. D.G. Smith shows up on the census records in the 1860.

1876 - Transfer of Ownership

In 1876 D.G. Smith sold the land to his brother Cyril C. Smith for a sum of $5,000. This transaction included much of the land between the Tuolunme River and the Middle Fork of the Tuolunme River; a 1,000 acres in Hetch Hetchy Valley; and a sizable

portion of an area on the North side of the Tuolunme River.The area between the Tuolumne and Middle Fork was identified as "Hog Range". The total parcel known as "Sheep Range".

1890 - The Name

We can assume that the name of "Hog Ranch" came from its identification with "Hog Range" and the possiblitiy that the rancher did raise hogs as part of their animal inventory. There was another story of how the Ranch got its name as reported in one of Ted Wurm's articles, and that was there was a rather inebriated gathering when one looking up at one of the mountain forms and was able to recognized the form of a sheep or hog on the face and after a discussion decided that it looked more like a hog than a sheep, hence "Hog Ranch". I place more credence on the fact that the area surrounding the ranch was called Hog Range, hence "Hog Ranch".

1896 - Recognition on a Map

The earliest map of the area was "The Map of Yosemite National Park" by N.F. McClure, 1st Lieut., 5th Cavalry, dated March 1896. This map clearly indicates Hog Ranch, Ackerson's, Hodgdon's and Aspen Valley as all interconnecting horse and/or wagon trails. No early established trails to Hetch Hetchy are plotted, but from comments of early settlers and ranchers Hog Ranch would have been a departure and arrival station for the Hetch Hetchy Valley.

The original Hog Ranch building is set to the North and higher on the slope, when the newer building is set lower and is of log cabin type construction. The Hog Ranch cabin is on City and County of San Francisco property and the lower cabin is on Stanislaus National Forest property. There is a well documented spring near the ranch house. There is evidence of other structure around the ranch building and they are thought to be associated with the Cavalry or possibly the remenants of a barn.

1890 - The Sixth Cavalry

Starting in the 1890's the Sixth Cavalry from the Presidio had stationed a unit at Hog Ranch to patrol Yosemite National Park from intruders who wished to drive sheep and cattle onto National Park lands and to stop persons from maintaining mountain ranches within the Park. It is my understanding that cattle and sheep drives into Yosemite National Park persisted until the early 1930's. A contigent of about a half a dozen men were stationed at the ranch in separate barricks. There is evidence of a rock foundation just North of the present Hog Ranch building which is thought to be constructed by the Cavalry.

1904 - The USGS Survey Team

At the turn of the century the ranch was home for a USGS survey party. The ranch building held the names of the persons on the plaque above the door which is presently held by he Carnigie ~~Institute~~ Institution.

F.E. Ferrel, Mrs F.E. Ferrel, August 31, 1904; Tom West; W.L. Thomas, Yosemite,CA Sept 19, 1907; Willam Raine; Morrisey; E. A. Kenney; Bill Madden, Board of Super. August 1910.

The purpose of the team was to more precisely locate the Yosemite National Park boundry and survey the Hetch Hetchy Valley along with City and County of San Francisco's team. They also could have been focusing on general surveying work to upgrade their own government maps.

1908 - The Visit from the City

The earliest photograph taken to my knowledge is a 1908 photograph taken with a group of city officials sent to inspect the dam site. The land was still under private ownership of Elmer E. Smith and Wife who sold it to the City in 1909.

1911 - The Traveler

In 1911 J. Smeaton-Chase gave his account of Hog Ranch in a book titled "Yosemite Trails" chapters on his travels in and around Yosemite. He, a photographer Mr. Field, and a packing guide traveled throughout the Valley and the rim of the Valley and then on to Hetch Hetchy into the Tuolumne Canyon ad up to the high Sierra. In his chapter The High Sierra: The Yosemite Valley to the Hetchy Hetchy he describes in detail the route from Crocker Station to Hetch hetchy Valley through Hog Ranch.

This paragraph is a description on what one would have found at Mather in the year 1911. *"We crossed the Middle Fork of the Tuolumne by a bridge of rough planks, and a few more miles brought us to Hog Ranch. The hogs have given place to cattle, and these, with a few horses, now roam over the green expanse and wax fat beyond the wont of their kind on superb pasturage. The ranch is like an English Park, -- a lovely valley, wide and grassy, broken with clumps of oak and cedar; but the house is a filthy old shaty which, nondescript and ugly at its best, and now long fallen into disrepair, is an offence to the eye and reeks with skunk-like odors"*

1922 - Enter The Stanford - Carnegie Institution of Washington - Department Plant Biology

Hog Ranch became the principle plant experimentation station of the Department Plant Biology with offices at Stanford.

In 1922 the Stansilaus Forest service granted permission to the Institute for forty acres free for their research activities and the City granting a similar area for the same use which included the Hog Ranch cabin. Mather was ideal because of its variation of moisture, shade, sun, slope and meadow conditions in a more confined area where a greater variety of ecological conditions could be simulated.

1926 - Second Building at Hog Ranch by The Carnegie Istitute

Because of the significant research activity at the ranch in the 1920's it was necessary to provide more space for the researchers. The Professors doing the research indicated that Joe Barnes as a young horseman worked on the construction of the cabin.

This structure is a typical log house with 10" to 12" diameter logs stacked and notched as one would do with Lincoln logs. The spaces between the logs were filled in with mortar and sealed. Don't let the exterior of this building set the stage for an image in one's mind of deterioration because the interior is immaculate and rich and warm as polished mahogany. Both cabins have kitchen facilities, although basic sink, wood stove and cabinets. No luxuries, no electricity,showers or bathrooms.

3.0 The Stanford - Carnegie Institution of Washington - Department Plant Biology

The Carnegie Institution was founded by Andrew Carnegie , a steel baron as a result of the industrial revolution of the late 1800's. He found the Institution in 1902 as his "institution of discovery" dedicated to the advancement of reasearch and training in the sciences. There were five research centers established for studies into

physical and biological sciences. "Gifted" researchers were given a chance to pursue their research endeavors with imagination and dedication.

Fortunately for Camp Mather the institute decided to create The Department of Biology at Stanford. The work done here is on the cutting edge of the ecological movement. Chris Somerville, the director of the department summarizes the departments activities as *"As we progress toward reduced dependence on non-renewable resources, it will be increasingly important to have a deep understanding of all aspects of plant biology so that we can prusue rational approaches to sustainable food and fiber production, and develop renewable sources of organic chemicals, polymers, liquid fuels from plants. At the same time, it is essential that we also develop an understanding of how to balance the agricultural and forestry uses of the land with the need to maintain ecological diversity"*.

Initial work on the effects of climate and altitute on plant genetics started in 1891 with researchers Kerner and Bonnier 1895 to 1920 who observed the differences between alpine and lowland plants of the same or related species. They proceeded to carry on their experiments at Pikes Peak in Colorado with Dr. Clements. In 1918 H.M. Hall became associated with the team and began to investigate habitats in California in a more varied topograhy. Researchers associated with experiments at Mather wereJens Clausen, David D. Keck and William M. Hiesey.

Work started at Mather in 1922 along with a series of other stations including Berkeley, Mather, White Wolf, Porupine Flat, Snow Falt Tuolumne Meadows, and Timberline at Tioga Pass. The task was to take plants of the same genus and transplant them from the various station to better under stand the reasons for their change in growth habits, size and survival in various climate zones. It was apparent from the beginning that the small reseach staff had to many stations to accurately perform tests on the various species and therefore the research station were consentrated into three locations; Stanford at 100 foot elevation, which is at the site of the Institutes offices, the other which is Mather at 4600 foot elevation, and Timberline at 10,000 foot elevation. In 1933 ~~the Stanford Station were closed an all~~ research effort was place at Mather and Timberline. + STANFORD

The main focus of the research during the 1920's and 1930's was plant manipulation. There were several methods devised to determine the growth and reaction of plants in a variety of climate and moisture conditions. These were reciprocal transplants, which was basically digging up plants from one altitute and transplanting it it into another. The other was sod transplanting which entailed removing larger segments of the earth and surrounding area and transporting it to different altitute. The third was to clone transplant which involved careful packaging of specimen plants and transport them to the Stanford station for propogation.

All of this experimentation would then be applied to a better understanding on how well the species studied will adapt to the various climate conditions and how enviromental changes can effect the heredity or the genetic makeup of the species. The conclusions could be then applied to crop breeding.

Much of this information was a common sense, and trial and error approach to studying plant physiology and geneology. Today it serves as a base for computer models and genetic investigation. Growing ground such as that found at Mather are not essential except to serve as monitor stations for observation and information gathering on climate, moisture and air quality. Biological research programs are now being done through computer technology in assessing genetic changes due

to climate and environmental conditions.Hog Ranch has been able to contribute to The Carnegie Institution in a significant manner over the years and is ready to close its doors after 75 years.

4.0 Activities since 1960's

Over the years the site has been used by research students and classes of plant biology and botany from Stanford University. It has been used for relaxing by some members of the research staff and at one time by the writer Allan Shields who in his writing the book *"The Tragedy of Tenaya" in 1974. He is quoted "While writing Tenaya's speech in the Cave on the porch of the cabin of the Carnegie Experimental Gardens at Mather I paused to look out and there, unbelievably, stood a large cinnamon-colored Black Bear with a hump much like the Grizzly's. Under the circumstances there was nothing else for me to do. I spoke to him, whereupon he turned about in a rather kittenish fashion (thus breaking the possible spell) and walked off into the deep forest".*

The Carnegie Institute had an active program until the mid 1970's when the research on the initial "Common Garden" approach to having clone plants occupy the three testing grounds was being increasingly overcome by laboratory testing. The research so relavent to the original program had now run its course and it was now onto different types of plant reasearch that would be more relivant to the problems of the twenty-first century. Members of the Institute have always recognized the importance of having these testing grounds were committed to adapting the facilities for further reasearch within the Institute and for outside groups needing such facilities for their studies.

I have selected only those independent research projects that were relevent to the work done at Mather, even though many of the studies made use of the Harvey Monroe Hall Natural Area (Timberline) at Tioga Pass. Many the researchers had social contacts with personal and visitors at Mather over the years they spent at Hog Ranch.

4.1 Fruit Fly Studies - 1963 to 1979

One of the first independent projects starting in 1963 by the University of Georgia, Department of Molecular and Population Genetics under the direction of Wyatt W. Anderson. This reaearch was to study the natural populations of Drosophila pseudoobscura (Common Fruit Fly). This Drosophila pseudoobscura would reproduce at a very rapid rate, and therefore any genetic changes effected by the environment could possibly be applied to human populations. This study brought **Theodosius Dobzhansky** to the site during the summer. He became know to the visitors and personnel as ---------. This intial study ended in 1975, but was over-lapped with additional studies on the same Fruit Fly.

Starting in 1973, Yale University, Osborn Memorial Laboratories under the direction of Dr. Jeffery R. Powell and The University of California, Los Angeles, Department of Biology under the direction of Dr. Charles Taylor started a new series of studies on Drosophila pseudoobscura. Theodosius Dobzhansky was once again involved in this research. Research was focused on a multi-faceted program starting with "The temporal frequency changes of enzyme and chromosomal polymorphisms in populations of Fruit Flies; Rates of dispersal; Genetics of natyral popuations XLIII; How far do flies fly?; Micro differentiation of chromosomal and enzyme polymorphisms in Drosophila perimilis; Habitat choice in natural popuation; Ecological varibles affecting the dispersal behavior; and Genetic variation in ecologically diverse

enviroments. Most of the above Theodosius paticipated in the research. This study was to run until 1988, but reprts are on file until 1979.

4.2 Plants Escape into Wild

A proposal was made in 1988 by Dr. Christopher Field of the Carnegie Institution of Washington at Stanford to determine the extent to which the plants introduced at b oth the Harvey Monroe Hall Natural Area and Mather escaped into the wild.

4.3 Achillea Studies

Not Significant

Dr. Jessica Gurevitch from the Department of Ecology and Evolution, State University of New York at Stony Brook for research on Achillea. This subject was to study the variation in leaf dissection and leaf energy budgets among populations of Achillea from an altitudinal gradient. This study started in 1985 and was completed in 1988 with an article in the American Journal of Botany, Sept. 1988.

4.4 Clarkia Studies

Dr. Joseph Henry; William L. Sward; and Dr. H.L. Wedberg from the Department of Botany at San Diego State University started work in 1979 on Clarkia williamsonii. Seed was collected through 1986, but no report is on file.

4.5 Aquatic Plant Studies

In 1982 through 1988 Professor Jon E. Keeley of the Biology Department of Occidental College, Los Angeles, CA studied the Distribution of Diurnal Acid Metabolism in submerged aquatic plants outside the Genus Isoetes; Diurnal acid metabolsim in Isoetes Howellii from a temporary pool and a permanent Lake; The use of stable isotopes in the study of photosynthesis in freshwater plants; and Photosynthesis of Aquatic Plants growing in Birch Lake.

4.6 Range Plant Study

Not Significant

Laurie Luedtke of the Department of Agronomy and Range Science of the University of California Davis made a proposal in 1986 to do a Comparison of phenology, growth and water relations of species on a moisture gradient on elevational transect from Mather to Timberline; and in 1988 made a proposal to Influence of Genetic Variability and Phenotypic Plasicity on Growth and Fitness in Selected Native Western North American Range Plants.

4.7 Botany Class Field Trips

Over the years since 1983 Professor John H. Thomas of the Department of Biological Sciences at Stanford University ran field trips to Hog Ranch for his classes in Systematics and Ecology of Vascular Plants.

5.0 Interview with Frank Nicholson 1995

WELLS IA O FORK

1960-61 Brain, Frank & David , Malcom Nobs in mid1930's on staff since the 1950's, died recently - gave history as they know it. Bill Heisey, Jens Clausen did most of the work. Original study of the nature of spicies. Three research stations, Stanford (1929), Mather, Timberland.How species became diversified found plants that grew plans that were common to all areas. Long and painstaking took 30 years.
Upper cabin is original Hog Ranch, lower cabin built by Bill Heisey in 1926, Jack Garrison and Joe Barnes
Buildings occupied in summers by caretaker employed by Carnegie, corral for horses, tent spaces, hunting blind, tent pole pegs, studebaker wagon, bullbozer came through.
Substantial fenced in area for growing area, prevent wildlife Deer and cattle. today it would take 3 years. only three botanical station by Carnegie in US.

Jack Garrison - Ran Evergreen Lodge For Many Years.

May Be

Stations will be abandon within 3 years, no program for use. direction of research has change radically. Satilite imagery, computer models etc. field stations are not part of twenty-first century research.
Chris Field has interest, but needs funds. Upper cabin was in very poor condition in the 1960's log book of the research. and the care of the buildings and the land. From 1930' to 1950's. Late 60's that had summer reasearch staff - Malcom Nobs
Other people Dr. Theodosius Dobzhansky study on fruit flies done at Hog Ranch. (look up) students up until recent time 2 or 3 years ago. Many other researchers dozens. Study on Clarkia John Thomas - Stanford botany class from Stanford. Use of place for research only, not vacation. Stacy French director at Stanford had date of upper cabin in 1856 by doing extensive research. Horse stable road fire road abandon in 1955-1958 from Hog Ranch to Hetch Hetchy Road.
Many Indian rocks in the area other than the large rock at Hog ranch,

F

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Linda Eade - Yosemite National Park - Valley Library
(209) 372-0280
David Forgang - Yosemite National Park curator - Yosemite Valley
Barbara Beroza - Photo Librarian
(209) 372-0282
Tat Niccols - Berkeley
Carol Edwards - USGS - Field Records Library
Denver Federal Center, RM C-2002, Bldg 20
7:30AM to 4:00PM Mon-Fri
USGS - Fields Records Library
MS 914, Box 25046, Federal Center
Denver, CO 80225-0046
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Hog Ranch Photos
Album # 14934
Hog Ranch Building with a group City Officials 1908
Elmer Smith & Engineer Rea
Entering Hetch Hetchy
A Longride

Album # 14796
Canyon Sawmill - 7-B-18 - 1914
Canyon Sawmill planeing mill 7-B-18 - 1914

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Hog Ranch Photo - #19-340

Experimental Studies onthe Nature of Species
1. Effect of Varied Environments on Western North American Plants
Jens Clausen, David D. Keck & William M. Heisey
Carnegie Institution of Washington D.C. Publication No. 520
1940

Richard L. Schadt
Landscape Architect
CA Lic. # 1301

Experimental Taxonomy at the Carnegie Institution: Origins and Development

Compiled by J. Clausen, October, 1962, with 1988 additions from C.B. Field and M.A. Nobs.

Carnegie Institution of Washington

Department of Plant Biology

Stanford, California 94305

This year (1989) is the 60th anniversary of the completion of the Carnegie Institution's series of formal transplant gardens, a central event for the shaping of modern plant ecology and evolutionary biology. On the basis of studies in these gardens, Clausen, Keck, and Heisey (1940, 1948, 1958) demonstrated the heritable nature of ecotypic differences (along with Turesson 1922, 1925) and explored the roles of genotype and environment in regulating ecological success. The contributions of the Carnegie group in "Experimental Taxonomy" or what we would call evolutionary ecology today are usually associated with Drs. Jens Clausen, David D. Keck, and William M. Heisey, scientists who joined the program in the late 20s and early 30s. However, the program in "Experimental Taxonomy" was conceived and established by the visionary scientist Harvey Monroe Hall. This paper summarizes the Carnegie program in "Experimental Taxonomy" during the period when Hall developed the concept and built the program, the period from 1918 until his death in 1932.

Hall became an investigator for the Carnegie Institution of Washington in 1919, joining the institution after eleven years on the faculty of the University of California at Berkeley. Rather than moving to the Carnegie facilities at Tucson or Carmel, Hall kept his residence at Berkeley and his scientific contacts at the University of California. He did, however, collaborate extensively with another influential evolutionary biologist then at Carnegie, Frederick E. Clements. Hall's systematic skills were a natural complement for Clement's ecological emphasis.

Hall began to publish in the Carnegie year book the year before joining the institution, producing the first of many papers with Clements. Their first paper described the method of reciprocal transplants, presenting it as "a new method - devised for transplanting related species and ecads (ecotypes) to determine the effect of a change of habitat in causing adaptation and variation in producing new forms." (Clements and Hall 1918a).

Clements and Hall (1919) began using the term "Experimental Taxonomy" the next year, in a paper on reciprocal transplants, variation transplants, and alpine transplants. Hall also participated in Clements' transplant investigations in Colorado during his first few years with Carnegie.

At that time, taxonomic monographs were considered the most important products of botanical investigation, and Clements and Hall used the transplant studies mainly as a tool for separating heritable from plastic characters. Hall did not emphasize the potential of transplant studies in elucidating the role the environment in inducing heritable variation (Hall 1932), but it was over this issue that he and Clements eventually split. Hall's first emphasis at Carnegie was on field- and garden-based systematic studies of several genera, including *Chrysothamnus*, *Artemisia*, *Atriplex*, and *Haplopappus*, first described by Clements and Hall (1918b). Monographs on these genera appeared in 1923 and 1928 (Hall and Clements 1923, Hall1928).

By the mid 20s Hall also worked on the taxonomy of the Madiinae or hay-field tarweeds in the Asteraceae. The style of his research was already well developed, combining genetic, ecological, and taxonomic viewpoints in the solution of a problem in phylogeny (Babcock and Hall 1924).

Carnegie publications first mention transplant experiments along the Sierra Nevada transect in a brief note in 1922 (Clements et al.1922). Two years later, Hall and Mason (1924) discussed "Sierran Transect and Gardens," noting that conditions for establishment and growth seemed especially favorable at Mather, the Sierra foothill station at 1400 m.

The early transplant experiments did not use formal gardens. Plants of the same or related species were reciprocally exchanged between their habitats, from one natural habitat to

the other. In fact, the transplants were planted in the holes left by the removal of the reciprocal plant. This method provided precise access to the natural habitat of each plant, but it also injected significant heterogeneity in the small-scale habitat. Operationally, the reciprocal transplant method was unforgiving in its requirement for detailed and accurate maps, and it was inflexible in limiting extensive experiments.

1926 marked the transition from the era of reciprocal transplants to the era of formal gardens. That year, Carnegie obtained a use permit for a 30 acre plot in the Tuolumne National Forest and obtained a verbal agreement with San Francisco to use city-owned land and an old pioneer cabin. Carnegie refurbished the cabin and established the Mather garden (Figure 1).

At the time the Mather garden was established, Hall was maintaining reciprocal transplant gardens at Berkeley (both at his private garden at La Loma, and the Schmidt Tract of the University), Montara (a coastal site), and at Benton, Nevada (a Great Basin site), as well as scattered plots at White Wolf, Porcupine Flat, and Tuolumne Meadows in Yosemite National Park (Figure 1).

In 1926, Keck (a systematist) and Hiesey (a physiologist) , fresh from their PhD studies at Berkeley joined Hall in the resaearch on "Experimental Taxonomy". Hall, Keck , and Heisey (1927) noted that "plants brought from 2,700 meters altitude to an altitude of 1,500 meters almost consistently develop and flower earlier than the corresponding form of the same species native at this lower altitude and grown under the same cultural conditions." They gave two possible explanations for this observation: (1) environmental selection among the many biotypes in the original environmental, and (2) a molding influence of ecologic conditions upon protoplasmic structure and physiological activities.

Hall made periodic trips along the Tioga Road to inspect the transplant plots. In the summer of 1927, he and Keck explored the Slate Creek Valley north of Tioga Pass. In 1929 they chose this site for the subalpine Timberline transplant station (Figure 1).

In 1928 Hall was in Europe, making studies at major herbaria and visiting workers in his field. He was already interested in finding a geneticist to join the studies at Carnegie and

consulted with Gote Turesson (at) and Jens Clausen (a cytologist at the Royal Agricultural College, Copenhagen, Denmark). One of Hall's accomplishments on that trip was to arrange a post-doctoral position for Clausen in the laboratory of Ernest B. Babcock at Berkeley.

1929 was an important year for the "Experimental Taxonomy" research team. Carnegie's Division of Plant Biology moved into a new laboratory at Stanford, and Hall and colleagues assembled at Stanford the perennial plants previously grown at Berkeley. At Mather, they installed facilities for artificial shade and watering, providing a series of four distinct environments at that site. Also in 1929, Keck, Heisey, and Merrill Adams built a second cabin at Mather, providing much needed facilities for housing and other functions in connection with the experiments. Finally in 1929, Carnegie established a third formal transplant station, Timberline, at 3050 m in the Slate Creek Valley just east of Yosemite National Park (Figure1), and built a small cabin. The U.S. Forest Service granted a use permit for 19 acres and built a road to the site. The surviving plants from the scattered plots in Yosemite were assembled here, though Keck's records (personal communication) indicate that no plants were brought from Benton, and probably none from White Wolf or Tuolumne Meadows.

From 1929 to 1931, Hall and colleagues expanded the collections of plants from the wild with extensive collections in the genera *Potentilla* , *Achillea*, *Zauschneria* (by Heisey), and *Penstemon* (by Keck). These taxa were grown at all three transplant gardens. Hall added to the biotype collections of the Madiinae, annuals grown only at Stanford.

On July 15, 1931, Jens Clausen was appointed a Staff Member at Carnegie. Clausen spent the first months of his appointment visiting related laboratories in northwestern Europe, and he arrived in San Francisco via the Panama Canal on October 29, 1931. On November 20 of that year Dr. Hall left via southern California for the meetings of the Carnegie Institution in Washington in December, but he became ill on the way and instead entered a Washington hospital.

Via a different route Hiesey brought an exhibit of live and flowering plants to Washington to be shown at the meetings. He conducted the exhibit, and Hall's friend, Walter T. Swingle of the U.S. Department of Agriculture, presented the lecture from Hall's manuscript (Hall 1932).

Before Hall's death in Washington on March 11, 1932, he placed a proposal before the U.S. Forest Service to establish a high altitude Natural Reserve Area, surrounding the Timberline Station. The Forest Service accepted the proposal and set aside approximately seven square miles on the east sides of the peaks of White Mountain, Mt. Conness, and North Peak in what was then the Mono National Forest (Figure 1). The Forest Service set aside the Harvey Monroe Hall Natural Area as a region "where natural conditions will be virtually free from disturbance excepting those necessary in the prosecution of scientific research" (Babcock 1934).

The Harvey Monroe Hall Natural Area is a botanically rich region where the cismontane California vegetation meets that from the Great Basin, and the circumboreal vegetation comes south in the high mountains to near its southern limits. This region also includes the high-altitude Sierra Nevada endemics species that occupied the unglaciated refugia of the peaks. It is, for such a high altitude site, unusually rich in species and in distinct hybrid forms. The potential of this area for research in biology, climatology, and geology is still great and stands as a lasting memorial to Hall's vision.

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M A Nobs

DIVISION OF PLANT BIOLOGY

Memorandum on the Mather and Timberline Field Stations

I. MATHER

Land Use:

A Special Use Permit was issued to the Carnegie Institution of Washington by the United States Forest Service July 26, 1926, and designated under

L
Uses, Stanislaus,
Carnegie Institution,
Camp, 4/10/29

This permit was issued by J. R. Hall, Forest Supervisor of Stanislaus National Forest and described as:

> "A small meadow and certain lands in the vicinity thereof, approximately 10 acres, as staked out on the ground and shown on a map in the Office of the Forest Supervisor, located on the Hog Ranch administrative site in the SE 1/4 NE 1/4, Sec. 2, T.1 S. R.19 E., M.D.M., and also the (approximately 10 acres) SW 1/4 of the NW 1/4 of the NW 1/4 of Sec. 1, T. 1 S. R. 19 E., M.D.M."
>
> for the purpose of "maintaining a small camp and pasture for horses, for carrying on plant experimental work for the Institution and in cooperation with the Forest Service."
>
> subject to the following conditions: "No charge in view of the nature of the work."

The conditions are those of the standard use permit form, except that clause 6 is changed to:

> "This use shall be actually exercised at least 10 days each year, unless the time is extended or shortened."

When the Lower Cabin was erected, Dr. H. M. Hall, a staff member of this Division and at the time in charge of the work in Experimental Taxonomy, wrote Supervisor J. R. Hall on July 9, 1929, and suggested that the use permit should contain a

clause allowing construction of necessary shelters. Supervisor J. R. Hall replied July 13, 1929, suggesting to write in after "horses" the words: "including necessary buildings" in the Use Permit. This letter was sent to the Washington office of the Institution.

Dr. H. M. Hall had the use also of a one-half acre tract and of a three-acre tract of land in Section 1, belonging to the City and County of San Francisco. This land adjoined the aforementioned land of the U. S. Forest Service. The land belonging to the City and County of San Francisco was part of an extensive recreation camp. This arrangement was of old standing, started around 1922, and only an oral agreement between Dr. Hall and the City officials existed.

In 1931, the land on which these tracts were located was presumably included in the Yosemite National Park, and the Institution obtained a Special Use Permit for it from the Yosemite National Park, dated April 14, 1931, signed by C. G. Thompson as Park Superintendent and approved by the Acting Director of the NationalPark Service on May 26, 1931. The specification of this land reads as follows:

> "Carnegie Institution of Washington, Divison of Plant Biology, Stanford University, California is hereby authorized until further advised, in writing, to use the following-described land in the above-named national park: The one one-half acre tract and the one three-acre tract lying south and east of Mather Ranger Station, these tracts being within the 80 acres lying along the west side of Section 1, Twp. 1 S., R. 19 E., being the W. 1/2 of the SW 1/4 of the NW 1/4 of Section 1, and the SW 1/4 of the NW 1/4 of the NW 1/4 of section 1, M.D.B and M., the two tracts above mentioned (1/2 acre and 3 acre) being at the present time in use by Mr. H. M. Hall of the Carnegie Institution for transplant purpose.

> "Buildings on these tracts lying within the boundaries of Yosemite NationalPark, and at present in use by the Carnegie Institution may continue to be used until further advised for the purpose of transplanting and conservation of native flora."

The buildings referred to in this permit are an old barn (later broken down by the snow) and the old Hog Ranch cabin, in case the surveying should show that the latter would be included within the Park (cf. Hall's letter to C. C. Thompson of March 29, 1931).

The first surveying included the old Hog Ranch cabin in the Park, but a few years later it was found that the park line had been moved farther east, entirely outside the area we were interested in. The two transplant tracts mentioned in the permit above have not been in use since 1933.

Buildings and Improvements:

In 1928 a new log cabin was erected on the 19-acre tract in Section 2 covered by the use permit from the Stanislaus Forest District. Other improvements include ca. 1200 feet of pipeline for water, and fences around the garden. The improvements on this tract are estimated as follows:

Lower Cabin: cost $1,000.00 in 1923 (including materials $350.00);

Water Pipe: about 1200 ft. of 3/4 inch galvanized pipe and outlets; original cost in 1923, about $400.00;

Fences: built in 1926 and 1933; estimated original cost $500.00 (materials $200.00);

Tools and Furniture: about $200.00.

Considerable depreciation has taken place since that time, although the facilities have been kept in fairly good repair.

The Upper Cabin: (the Hog Ranch cabin):

This is an old log cabin, supposedly built in 1856, which was the living quarters for the Hog Ranch. It had been used by the City of San Francisco during the period of surveying for and construction of the Hetch Hetchy Reservoir. At the time when Dr. Hall started his work at Mather, this cabin had been abandoned and was almost in ruins, although the walls and rafters were sound. Dr. H. M. Hall obtained the use of this cabin in 1926, and the City of San Francisco allowed the Institution to use lumber free of charge from the dismantled City saw mills near Mather. New floor joists were put in and the floor repaired, two new and larger porches were constructed, and the roof and the sides of the cabin were sheeted with new shingles and shakes. A carpenter was hired to do part of the work, but he was aided by David D. Keck and William M. Kiesey, from whom this information was obtained. Dr. Hall estimated that the cost of the restoration of this old landmark was $1000.00. The restoration took place before the Division of Plant Biology came into existence, and there are, therefore, no records at this office of Dr. Hall's understanding with the City of San Francisco nor of the money paid for the repairs.

The ownership of the old Hog Ranch cabin is somewhat uncertain. It happens to be located very near the boundary line between sections 1 and 2. Section 1 formerly belonged

to the City and County of San Francisco, but this part of section 2 was and is Forest Service land. The ownership of the cabin is therefore in doubt only in case it is within Section 1. If so, the ownership depends upon whether Section 1 is now part of the Yosemite Park, as it was supposed to be in 1933, or was transferred to the Stanislaus National Forest, or reverted to the City of San Francisco.

Dr. Hall was under the impression that the cabin belonged to the City of San Francisco. However, a topographical sketch map D-490 of land of the City and County of San Francisco in the vicinity of Mather, Tuolumne County, of September 1923, approved by Mr. M. M. O'Shaughnessy, the City Engineer, shows this cabin in Section 2 just west of City holdings. A letter from Major R. Y. Stuart of the Forest Service Office in Washington, D. C. to Dr. J. C. Merriam, of January 13, 1930, also refers to both cabins as being in Section 2.

For these reasons we do not know who owns the old Hog Ranch cabin. All we know is that it had been used by the City of San Francisco over a period of years prior to 1926 and that it had become almost worthless because of lack of repairs and weathering. The Carnegie Institution put approximately $1000. of improvements into it (mostly labor) in 1926, and since that time it has been used as living quarters by the Institution's staff when they were working at the Mather transplant station.

II. TIMBERLINE

Land Use:

The Timberline Station is also operated under a Special Use Permit, issued by the United States Forest Service November 15, 1929. It was designated as follows:

L
Uses, Mono
Carnegie Institution,
c/o Prof. H. H. Hall,
Experimental and Demonstration Area,
11/15/29

This permit was issued at Minden, Nevada, by Mr. W. H. Maule, Forest Supervisor of Mono National Forest. The area is described as:

"A designated area following selection and survey of the area; Within NE 1/4 SW. 1/4 Sec. 12, T 1 N, R 24 E. MDM. Area 26.7 Acres. Mono Lake District."

The permit reads "without charge" and the conditions are those of the standard use permit form. This permit was sent to Mr. Gilbert December 9, 1929 for filing at the Office of Administration of the Institution. This plot was later included within the Harvey Monroe Hall Natural Area.

Buildings and Improvements:

A small cabin of corrugated iron was built here in 1929, and there is also a small shed used as protection for cars and as storage space. The total initial cost to the Institution of the improvements was approximately $1000.00.

January 30, 1946.

J. Hall.

Personnel associated with Mather Research Station "Hog Ranch"

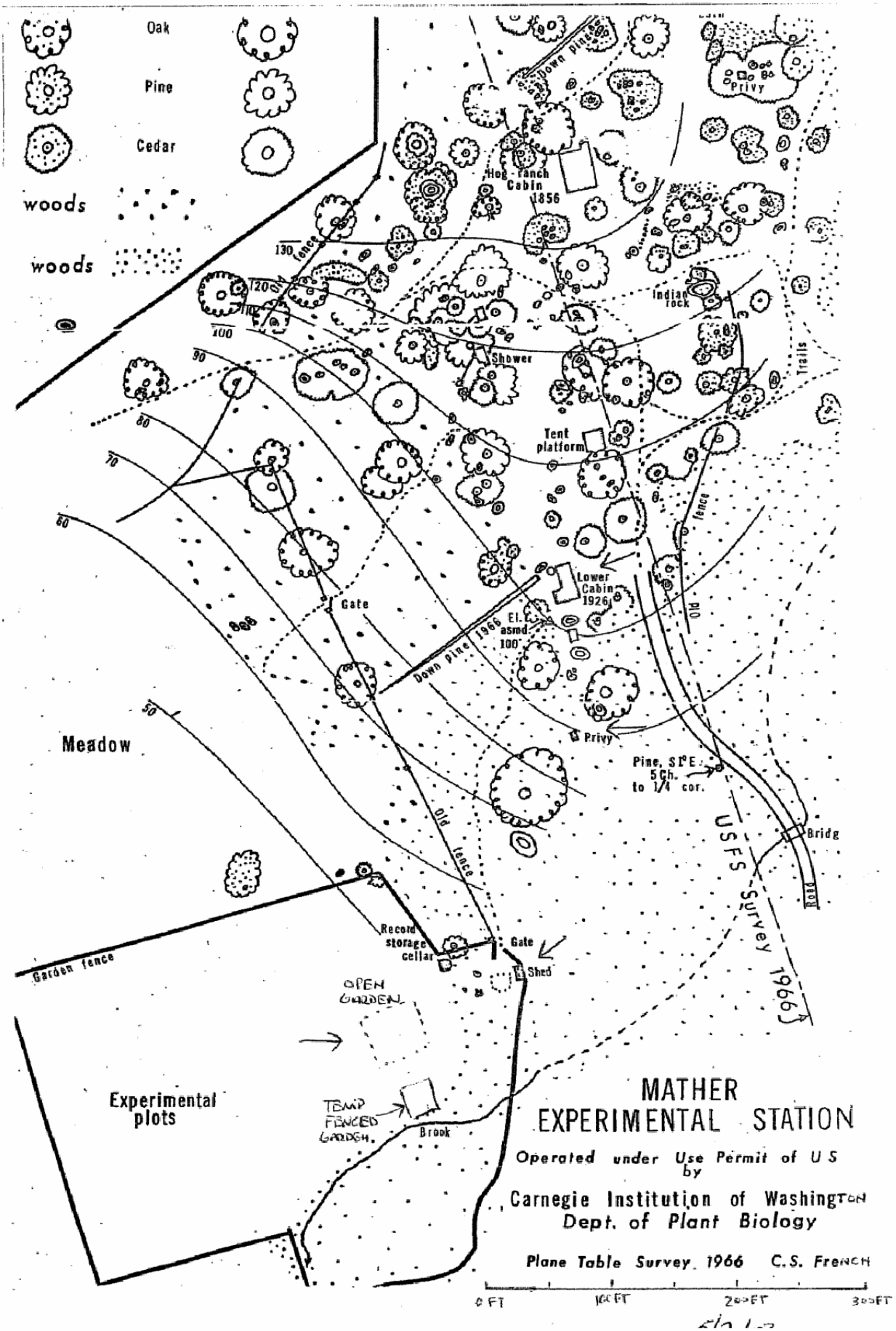
Name	Comment	Date(s)
H. M. Hall	Hall with Ernst B. Babcock first visited and camped at "Hog Ranch" Mather. A general Botanical collecting trip.	1902
H. M. Hall	H. M. Hall and Carlotta Hall ~~of~~ Yosemite Flora, (Mostly done with headquarters at Mather.	1912
H. M. Hall	Staff member of C.I.W.	1919
H. M. Hall	Start of reciprocal transplants	1922
Herbert L. Mason	First Mather assistant	1926
Mather Transport Station.	Formally established, Use Permit for 30 acres from U.S. Forest Service	1926
Mather	Reciprocal transplant technique discarded. The formal garden established.	1926
Swingle	Testing of native and exotic Ephedras	1926
William Hiesey	Working with H. M. Hall on physiology of ecotypes. Methods for transportation ~~etc~~ measurements in garden and field.	1927
David C. Keck	Working with H. M. Hall on Penstemon of Sierra	1927-1951
Mather	"Water-light" gardens established.	1927-1929
Merrill Adams	Garden assistant	1927-1929
Walter T. Swingle	240 transplants of alkaloid producing species. climatic effect on production.	1927-1929
Mather	Lower cabin built by W. M. Hiesey	1928
Timberline Station	Established	1929
Dr. Lens Clausen	to C.I.W.	October 1931 to his death in 1969
H. W. Hall	Death	March 11, 1932
Carl Mahuren	Garden Assistant	1934
Burt Walker	Garden Assistant	1935-1936

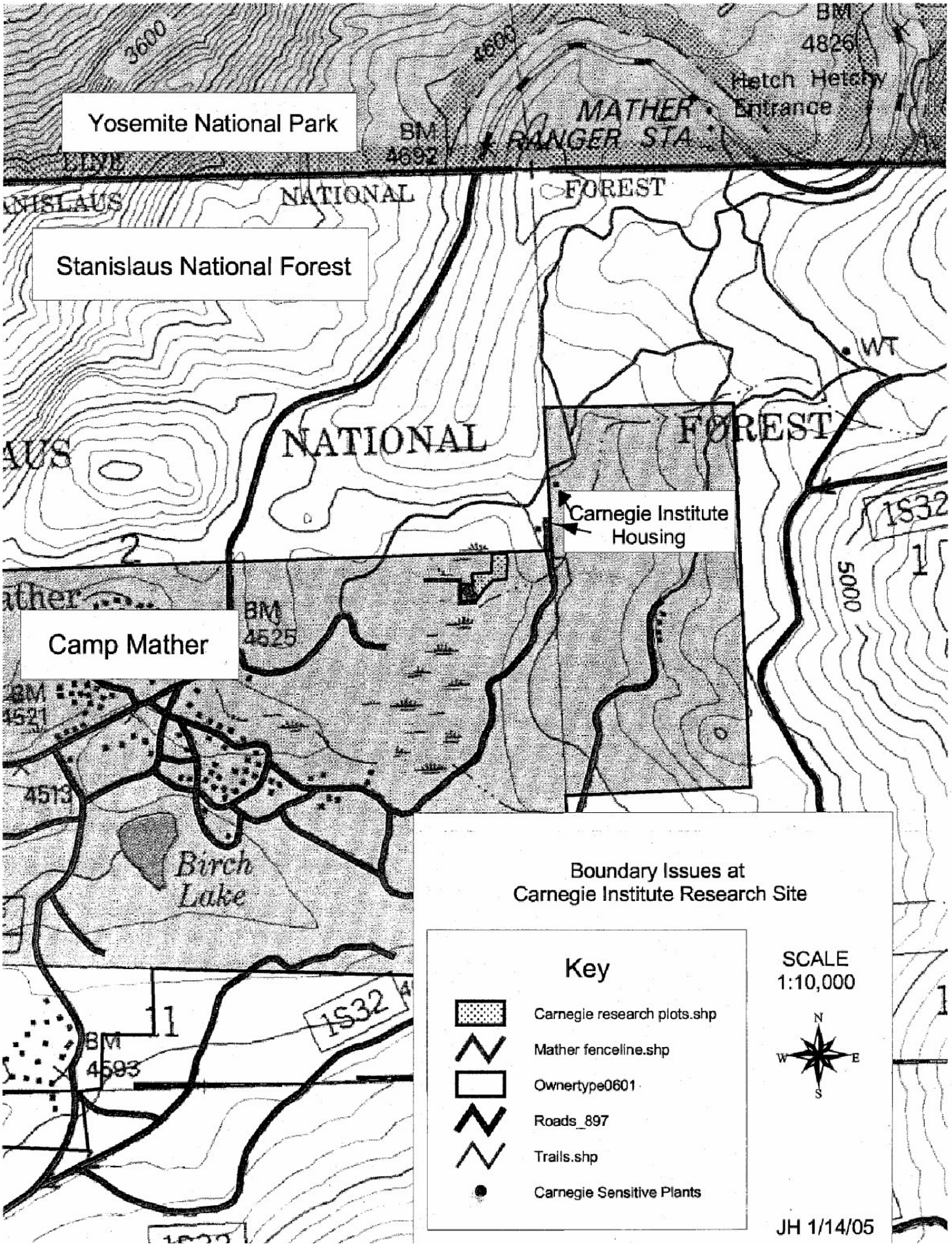
Åke Gustafsson	Cytology of Horkelia	1937
John Coulter	Garden Assistant	1937-1938
Fritz Went	Ecological studies	1939 - on
M. A. Nobs	Garden Assistant	1939-1940
Authur Kruckeberg	Garden Assistant	1941-1942
W. E. Lawrence	Studies on Achillea and Deschampsia - Transplants and Cytology	1942-1944, 1945-1946
Palmer Stockwell (Forest genetico)	Transplants and seed germination tests. of Pinus sp. and Hybrids at Mather & Timberline.	1945-1946
Dr. Mogens Westergard,	Cytological studies on Sierrian species.	1946
T. Doubzhansky		1946 - to his death
Mather	Byosystematic and Transplant Conference Th. Doubzhansky F. W. Went Mogens Westergard D. G. Catcheside M. J. Heuts G. L. Stebbins Carl Epling Reed C. Rollins Carl Sharsmith	1947
Dr. Headda Mordenscoksold	Studies on Sierrian Lusula	1947-1948
G. ~~Edward~~ Stebbins	Testing species and hybrids of Elymus, and conference and visits with students, 1940 on	1949-1952
Carl Epling	With Doubz. Stebbins analysis of Arctostaphylis	1947
Pittendrigh	Working with Th. Doubz.	1947
Pierre Dansereau	Ecological Studies	1948-1949
Verne Grant	Pollinating mechanisms in Sierrian Flora, and Polemoniaceae in mid Sierra	1949-1950
Henry S. Thompson	Studies on Dodocathyon	1949-1952

Robert Vickery	Started transplant studies on *Mimulus gutatattus* complex.	1949
Herbert Baker	*Armeria* Transplants	1949
Paul Grun	Grass studies and *Montia* studies.	1949-1959
Carl V. Taylor	*Veratrum* sps. for chemical analysis. Rexal Drugs. Transplants	1950
Some of Doubz.'s associates	Marshall Wheeler - Univ. of Texas M. J. D. White " " " E. B. Ford - Oxford England Paul Levine - Amhurst P. T. Ives - Amhurst Melvon Green - U. C. Davis G. Ledyard Stebbins (observing his grass plots) - U. C. Davis	1951
Axel Nygren	*Poa* fixations for study on embryology at the 3 stations	1951-1952
Merlyn Adams	Garden Assistant	1951
Dr. Herman J.Paff U. C. Berkeley	Studies on local yeasts taken from *Drosophila*	1952-1954
Minulus	Preliminary plantings started	1952
Ed Kethledge (Edwin)	Garden Assistant	1952
Frederic Eherendorfer,	Studies on Achillea	1952
Charles Mason	Garden Assistant	1953-1954
Ellias Landolt	Study of local flora Specific studies on mid-Sierrian *Lemna* ~~dal~~ deal	1954-1955
Hampton Carson	*Drosophila*. Assoc. of Th. Dobz.	1954-55-56
Harlan Lewis	*Clarkia* studies	1955-1956
Dr. Tom Pray	Garden Assistant. Studies on Sierrian ferns.	1955-56-57 and 1959
Harlan Lewis	*Clarkia* studies	1958
David Mason	Garden Assistant	1958
Dr. Edwin W. Tisdale	Studies on *Festuca*	1958-1959

Edward Tisdale	Festuca transplant studies	1959
Steve Gilborne	Garden Assistant	1960-1961
Dr. John Thomas	Taxonomy class	1962 - on
Prof. Yvonne Aitken	Effect of climate on agricultural species	1962-1963
Andrew N. Lenz	Garden Assistant	1962
Olle Björkman	Ecological measurements and transplants of ecological races of Solidago from Northern Europe and Spain.	1963 - on
Dr. David M. Gates	Ecological measurements in garden vs. natural env.	1963
Oakley Shields	Garden Assistant. Studies on Sierrian Lepodoptera	1963
Frnak Nicholson	Maintenance and Administration of Mather	1963 - on
Dr. C. Stacy French	Mapping of the Mather Field Station	1965
Dr. Baki Kasaphligil	Field and demonstration study for Botany students of Mills College, Oakland, Calif.	1965 ~~to~~ 1967
Harlan Lewis	10 graduate students Field studies U.S. Los Angeles	1965
Mather	40th year of the use permit from U.S. Forest Service	1966
Mary Mantuani (Duke U.)	Water relations comp. study between Solidago californicus and S. elongata	1966 to 1968
Dan McMahon (U. of Chicago)	Ribulose diphosphate carboxolate of races of Mimulus at Mather - Stanford and Timberline	1967
Stephen Wood	Garden Assistant	1967-1968
Robert W. Pearcy	Dischampsia transplants	1969-1970
Harold Mooney	Ecologocal studies class use - "Field research techniques in Biology"	1969
XI International Botanical Congress	Pre and Post congress tours and demonstrations at Mather	1969
Wm. Hiesey	"Retired"	1969
Peter Mika	Garden Assistant	1969

Jens Clausen	Died	Nov. 22 1969
Dorothy A. Douglas (Student of Herbert Baker)	Energy Budget for Vegetative versus sexual reproduction in Mimulus primuloidee garden transplants.	1969 to 1972
Dr. Herbert & Irene Baker	Chemical analysis of Nectar of Sierran Flora	1969
Clifford Smith (San Jose State)	Evolution class studies	1970 to 1973
A. Ayala (U.C. Davis)	Enzyme polymorphism in Drosophila	1970
John L. Horn	Garden Assistant	1972
Mike Baad (State Univ. Calif., Sacramento)	Class, Study of Mid-Sierra Flora	1972-1973
13th International Congress of Genetics	Demonstration Tour of Mather station.	1973
Dr. Harry Westrand (Agenus Scott College Georgia)	Drosophila genetics	1975
Prof. Charles Taylor	Migration studies on Drosophila	1975-76-77-78
H. L. Wedberg (San Diego State Univ.)	Clarkia williamsonia	1976-1977
Dr. Jellery R. Powell,	Migration studies Drosophila	1976-77-78 1980-81-82
Harry Wistrand	Studies on Drosophila psuedoobscura Agenes Scott College, Decatur, Georgia	1975
Charles E. Taylor (U. C. Riverside)	Drosophila dispersal	1978
Larry Sward	Clarkia will.	1978
Dr.Cheril Wetzel (U.C.Berkeley Ext. Davis)	Botany class	1979
Joe Henry	Clarkia studies Joseph W. Henry, Jr.	1981
Dr.Jon E. Kelley (Occidental College)	Isoetes ecology and energy budget. ?	1981


Oak
Pine
Cedar
woods
woods
Down pines
Privy
Hog Ranch Cabin 1856
130
fence
120
110
100
90
80
70
60
50
Indian rock
Shower
Trails
Tent platform
fence
Lower Cabin 1926
Gate
Down Pine
1966 El. asmd 100'
Old
Privy
Meadow
Pine, S 1°E. 5 Ch. to 1/4 cor.
USFS Survey 1966
Bridg
Road
Old fence
Record storage cellar
Gate
Shed
Garden fence
OPEN GARDEN
Experimental plots
TEMP FENCED GARDEN
Brook
MATHER
EXPERIMENTAL STATION
Operated under Use Permit of U S
by
Carnegie Institution of Washington
Dept. of Plant Biology
Plane Table Survey 1966 C.S. French
0 FT
100 FT
200 FT
300 FT


Yosemite National Park
Stanislaus National Forest
Camp Mather
Carnegie Institute Housing
Birch Lake
MATHER
RANGER STA
Hetch Hetchy Entrance
NATIONAL
FOREST
Boundary Issues at
Carnegie Institute Research Site
Key
Carnegie research plots.shp
Mather fenceline.shp
Ownertype0601
Roads_897
Trails.shp
Carnegie Sensitive Plants
SCALE
1:10,000
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JH 1/14/05

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
STANISLAUS NATIONAL FOREST

ADDRESS REPLY TO
FOREST SUPERVISOR
AND REFER TO

SONORA, CALIFORNIA

L
Uses, Stanislaus
Carnegie Institution
Camp 4-19-26

December 2, 1926

H. M. Hall
Department of Botany
University of California
Berkeley, California

Dear Sir:

Reference is made to your letter of November 9 and previous correspondence regarding your desire to have the SW¼ of the NW¼ of the NW¼ of Section 1, Township 1S., Range 19E. added to the area that you desire for plant experimental work.

Rather than have two separate permits, I am adding this additional area to the description as given in your original permit and am sending you a new permit. Please destroy the old permit upon receipt of this new one.

Very truly yours,

J. R. HALL, Forest Supervisor

Permit sent to Gilbert, Wash. for file.
Copy here.
Thanks sent to JRH

Copy of permit of Jan 5 as modified by new permit of same date sent made out & sent with letter of H. M. Hall Dec. 2, 1926.

This is the original permit; the written changes made to agree with new permit which goes to Carnegie Inst. - Wash.

Form 882
(Revised Feb., 1921)

SPECIAL USE PERMIT

L
Uses, Stanislaus,
Carnegie Institute,
Camp, 4/19/26.

(Case designation.)

Permission is hereby granted to The Carnegie Institute,

of Washington, D. C.
(Address: H. M. Hall, University of California, Berkeley, Calif.)

to use the following-described lands: A small meadow and certain lands in the
(Describe the lands to be occupied, if unsurveyed, by metes and bounds, with reference to a road or stream or well-known landmark; right of way by terminal points, direction, and lands occupied.)
vicinity thereof, approximately 19 acres, as staked out on the ground and shown on a map in the Office of the Forest Supervisor, located on the Hog Ranch administrative site in the SE¼NE¼, Sec. 2, T. 1 S., R. 19 E., M. D. M., also the SW 1/4 of the NW 1/4 & the NW 1/4 of Sec. 1, T. 1S., R. 19E., M.D.M.

for the purpose of maintaining a small camp and pasture for horses, for
(Briefly but clearly describe the use, giving area of inclosures, length and width of right of way, etc.)
carrying on plant experimental work for the Institute and in cooperation with the Forest Service,

subject to the following conditions:

No charge in view of the nature of the work.

1. ~~The permittee shall pay to the Bank of (United States Depository), to be placed to the credit of the Treasurer of the United States, in consideration for this use, the sum of dollars ($) for the period from , 19 to December 31, 19 , and thereafter annually on January 1 dollars ($).~~

2. The permittee shall comply with the regulations of the Department of Agriculture governing the National Forest, shall observe all sanitary laws and regulations applicable to the premises, and shall keep the premises in a neat and orderly condition and dispose of all refuse and locate outhouses and cesspools as required by the Forest officers.

3. This permit is subject to all valid claims.

4. The permittee shall take all reasonable precaution to prevent and suppress forest fires.

5. The permittee, if engaged in business, shall conduct same in an orderly manner and in accordance with all requirements of the laws of the State of California, as well as the laws of the United States.

6. The permittee shall pay the United States for any damage to its property resulting from this use.

7. The permittee shall fully repair all damage, other than ordinary wear and tear, to roads and trails in the National Forests caused by the permittee in the exercise of the privilege granted by this permit.

8. ~~Construction work (or occupancy and use) under this permit shall begin within _____ months, be completed within _____ years from the date of the permit; and~~ This use shall be actually exercised at least 10 days each year, unless the time is extended or shortened.

9. In case of change of address, permittee shall immediately notify the Forest Supervisor.

10. The charges for this use may be readjusted whenever necessary to place this permit on a basis consistent with the charge to other permittees for like privileges. A general readjustment will be made at the end of five years from the date of issuance of permit and at the end of each five-year period thereafter.

11. No National Forest timber may be cut or destroyed without first obtaining a permit from the Forest Supervisor.

12. Upon the abandonment, termination, or revocation of this permit, and in the absence of an agreement to the contrary, the permittee, if all the rental charges due the Government have been paid, may, within a reasonable period to be determined by the issuing officer, remove all structures which have been placed on the premises by him, except where the material was furnished by the Forest Service, but upon failure to remove the structures within that period they shall become the property of the United States.

13. This permit may be transferred with the approval of the officer by whom it was given or his successor, subject to such conditions as may be imposed at the time of transfer. It shall terminate upon breach of any of the conditions herein or at the discretion of the District Forester or the Forester.

14. The permittee shall provide, whenever requested by the Forest officers, a way across the land covered by this permit for the free ingress or egress of Forest officers and for users of National Forest land and purchasers of National Forest products.

15. _____
(Special stipulations necessary.)

July 6, 1926.
(Date)

D. R. Hoel
(Signature of officer issuing permit.)

Forest Supervisor
(Title.)

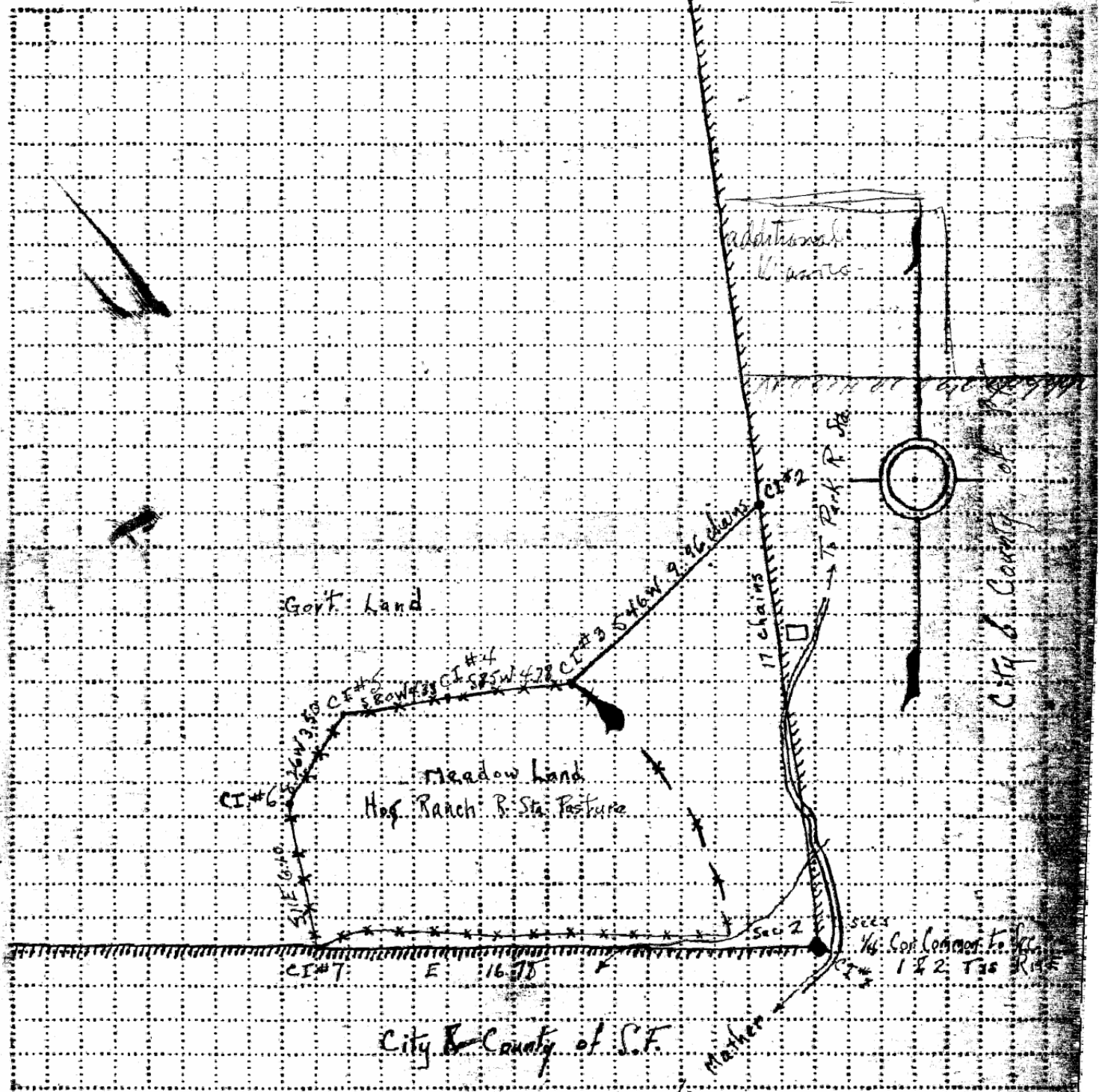
8—713 GOVERNMENT PRINTING OFFICE

29

UNITED STATES DEPARTMENT OF AGRICULTURE—FOREST SERVICE

Land District. Mag. Declin. 18° E Area 79 Acres

(Case designation) SE, NE Sec 2 (Subdivision and section) T. 15 R. 19E Mer. Scale 16 inches = 1 mile



Field work by _____, Date June 4, 1926, Platted by R.L. Kloppenburg

Remarks: _____

Approved _____, 19____

(Approving officer.)

Form 876a
(Revised Oct., 1924)

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

STANISLAUS NATIONAL FOREST

ADDRESS REPLY TO
FOREST SUPERVISOR
AND REFER TO

SONORA, CALIFORNIA

April 30, 1926

L
Uses
Stanislaus

H. M. Hall,
Department of Botany,
University of California,
Berkeley, California.

Dear Sir:

Your application for a Special Use permit on this Forest of 30 acres in the SE NE of Section 2, T.1 S.,R.19 E., is received.

I find that the Hughes Brothers of Chinese Camp, California, grazing permittees, have had for a number of years, a special use permit for 11¼ acres, taking in the meadow on the land which you applied for. I am writing today to Ranger Kloppenburg for a report upon your application and he will doubtless take into consideration Mr. Hughes' permit when he makes his report.

I am sure there is no doubt about our being able to give you a permit that will take care of your needs, but I am wondering as to the part the 11 acres of pasture plays in your requirements. The map you submitted would indicate that there is quite a meadow on the lands that the City of SanFrancisco allows you to use.

The pasture permit to Mr. Hughes is terminable because it is on a Ranger Station site, and can be terminated on 30 days notice. If it is necessary to fulfill your needs that you have this Hughes pasture I will be inclined to cancel his permit.

After receipt of the Ranger's report I may want to visit the area personally. Possibly it could be arranged that we could be in there at the same time you plan to come up to the experimental area.

It just happened that Mr. Phillips, the Right-of-way Agent for the City of San Francisco, was in my office this morning with Mr. Hughes concerning grazing privileges on the

City's lands, and as I understand it, Mr. Phillips did not seem to know about your lease from the City, and did not think you had any, whereas Mr. Hughes has had the understanding with the City that he could use their lands for grazing, and it had been Mr. Phillips intentions to allow Hughes to continue this use. If you are planning a long time experiment and need their lands ungrazed, it might be possible you would want to see Mr. Phillips and secure a lease, since he is the one that handles all such business. He is at Room 375 City Hall, San Francisco, California.

Very truly yours,

J R Haeu

Forest Supervisor.

Mather, Tuolumne Co., Calif.
July 9, 1929

U. S. Forest Supervisor
Sonora, California

Dear Mr. Hall:

This is to notify you that we have constructed a cabin on the 29-acre tract at Hog Ranch used under special use permit from your office (probably filed as special use, cooperation, Carnegie Institution of Washington). This was donelast year at my order but while I was in Europe, and the assistant in charge did not think to obtain permit in advance. Perhaps our use permit should contain clause allowing construction of necessary shelters and you may want to write this into your copy. Our copy is in Washington. If you think anything should be done about this please instruct me as to simplest manner to proceed.

I also wish to explain that the cabin is of cedar logs, which might look as though we were cutting trees. The logs were fron trees cut on cypress San Francisco property which did not develop and they were subsequently turned over to us. Otherwise they would have been waste. When you see the cabin I think that you will consider them as being put to good use.

Supervisor Haule and I are again planning to meet at our new station on Slate Creek, near Saddlebag Lake and I have told him that he might make appointment with me through your office. If, therefore, you should get phone message or telegram for me will you kindly have it relayed to me here care of Mr. Shaw. I understand that such messages may come through Ranger Pecklupah's station. I hope that any cost of messages either to or from me can be charged to me.

Our Hog Ranch Station has greatly improved in the last few years and we (Mrs. Hall and I) hope that you can pay us a visit while we are here this summer.

Very sincerely yours,

J. Hall wrote July 18 suggesting write in after horses the word - Including necessary buildings. Letter sent To Gilbert (Wash)