



United States  
Department of  
Agriculture

Forest  
Service

Pacific  
Southwest  
Research  
Station

P.O. Box 245  
Berkeley, CA 94701-0245  
(510) 559-6300  
FAX (510) 559-6440

File Code: 4080

Date: JAN 29 1998

Ms. Marcelle M. Baxter  
Software Licensing and Business  
Contracts Specialist  
University of California  
6701 San Pablo Avenue, Suite 218  
Berkeley, California 94720-5600

Dear Ms. Baxter:

Enclosed as you requested in your letter of January 23 is one fully-executed new agreement providing for University of California use and management of two Forest Service research sites, the Central Sierra Snow Laboratory and the Onion Creek Experimental Forest.

I am most pleased that we have at long last concluded these arrangements. The University and the Forest Service will surely both benefit. I look forward to working closely with Ms. Fabbri, the UC Berkeley Vice Chancellor for Research, and faculty and others in our future cooperative research activities.

Sincerely,

HAL SALWASSER  
Station Director

Enclosure

cc:

G. Mason (w/encl.)  
M. Poth, PSW-Riverside (w/encl.)  
J. Roubique, Truckee RD (w/encl.)  
J. Skinner, Tahoe NF (w/encl.)



Caring for the Land and Serving People

**GENERAL AGREEMENT**  
**between**  
**THE REGENTS OF THE UNIVERSITY OF CALIFORNIA**  
**and**  
**UNITED STATES DEPARTMENT OF AGRICULTURE**  
**FOREST SERVICE**  
**PACIFIC SOUTHWEST FOREST AND RANGE EXPERIMENT STATION**

**THIS AGREEMENT** is made and entered into this \_\_\_ day of \_\_\_\_, 1998 by and between **THE REGENTS OF THE UNIVERSITY OF CALIFORNIA**, a California corporation acting on behalf of its Office of the Vice Chancellor for Research, University of California, Berkeley hereinafter referred to as "University" and the **UNITED STATES DEPARTMENT OF AGRICULTURE, FOREST SERVICE** hereinafter referred to as "Forest Service".

**WITNESSETH:**

**WHEREAS**, the parties hereto are mutually interested in providing for cooperation in forest and rangeland research, educational/public service programs and projects related to ecology, floristics, systematics, erosional processes, hydrology, etc., at the Station's Central Sierra Snow Laboratory (CSSL), located 2 miles east of Soda Springs, California, and its affiliated Onion Creek Experimental Forest (OCEF), located approximately 7 miles south of Soda Springs as shown on Exhibits A and B attached hereto and made a part of this Agreement; and

**WHEREAS**, the parties hereto mutually desire to foster the continued use of the CSSL and OCEF by a broad spectrum of educators and public and private land managers as a research and education facility, and in the coordination and management of research and education activities which may be conducted at the CSSL and OCEF; and

**WHEREAS**, the Forest Service while retaining ownership of CSSL and OCEF wishes to pass management and use of these research facilities to the University of California which has agreed to undertake said management;

NOW, THEREFORE, in consideration of the mutual covenants, conditions and terms hereinafter set forth, and for other good and valuable consideration, the parties hereto agree as follows:

**Definitions:**

<b>"Forest Service Coordinator"</b>	<b>Forest Service Project Leader of the Station's Research Work Unit PSW-4451.</b>
<b>"Forest Service Cooperators"</b>	<b>The group of state and federal agencies, universities and colleges, utility districts, transportation groups and private individuals with which CSSL has a variety of cooperative relationships.</b>
<b>"Station Manager/Steward"</b>	<b>Title of managerial position indicating position's dual function.</b>
<b>"weir"</b>	<b>A low dam built in a river to backup or divert water .</b>
<b>"Faculty Director"</b>	<b>Faculty member appointed by the Vice Chancellor for Research, who will assume responsibility for coordination of research projects at CSSL/OCEF.</b>

**A. THE UNIVERSITY AGREES TO:**

1. Assume responsibility for and provide, with general Forest Service approval, coordination and management of the CSSL and OCEF and of the research and other activities conducted at both research sites.
2. Develop and implement, with the review and approval of the Forest Service, a clearly stated user policy for the CSSL and the OCEF. Such user policy shall enumerate coordination procedures for all research, educational, and other uses, and state criteria for establishment of research studies by prospective users of the CSSL and of the OCEF.

3. Provide a Station Manager/Steward to supervise research and educational activities, and facilities maintenance at CSSL/OCEF. Station Manager will report directly to the Assistant Vice Chancellor for Research and manage the Station in accordance with campus policies and procedures. All research projects will be subject to oversight by the Faculty Director.
4. Maintain all Government-owned improvements at the CSSL/OCEF, in an acceptable condition.
5. Provide, for the review and approval by the Forest Service, no later than December 31 of each year, five (5) copies of an Annual Report which will:
  - a. Summarize all research and educational activities at CSSL and OCEF during the past University fiscal year (ending June 30 of each year).
  - b. Describe, in collaboration with the Forest Service, the guidelines of a mutually acceptable, annual research and educational program/plan of action covering all research to be performed at CSSL/OCEF, regardless of sponsor, in the upcoming fiscal year.
  - c. Provide, in collaboration with the Forest Service, a yearly operating report and plan for maintenance, rehabilitation, and reconditioning of existing improvements and for control of fire at the CSSL. This plan shall designate the obligations of each party and shall include a provision on how the cost of management will be shared by the parties. If changes are made to the fire control section of the report, two copies of that section shall be provided to the Forest Service and to the Donner Summit Fire Department charged with fire protection of the CSSL. If no changes are made to the section, notice that the current plan has been found sufficient shall be provided to the Forest Service and to the Donner Summit Fire Department.
6. Abide by Forest Service and State of California fire prevention and restriction codes and do everything reasonably within its power and shall require its personnel to do everything reasonably within their power, both independently and upon request by the Forest Service, (as specified in 5c.), to prevent and suppress fires on the CSSL and OCEF. The University agrees to be responsible for notifying the Placer County Fire Department in the event of fire at

the CSSL. In the event of fire at the OCEF, the University will call the Truckee Ranger District of the Tahoe National Forest.

7. Provide the Forest Service Coordinator, on a yearly basis with long-term data sets, in a manner specified in Exhibits C and D.
8. Provide Forest Service CSSL Cooperators, as specified in Exhibit E, attached hereto and made a part of this Agreement, with appropriate current or historical data from on-going collections, on an on-going basis and as requested by Cooperators.
9. Assign a technician to continue on-going, long-term data collection, and to perform research and educational program projects in accordance with the research plan.
10. Fully repair all damage that occurs during the term of this Agreement, other than ordinary wear and tear, to improvements and land of the CSSL/OCEF.
11. No waste or byproduct shall be discharged if it contains any substances in concentrations which will result in substantial harm to fish and wildlife, or to human water supplies.

Storage facilities for materials capable of causing water pollution, if accidentally discharged, shall be located so as to prevent any spillage into waters, or channels leading into water, that would result in substantial harm to fish and wildlife or to human water supplies.

The University shall have no liability or responsibility for toxic or hazardous materials in existence on the property prior to the effective date of this Agreement. "Hazardous Materials" as used in this Agreement, shall mean any material substance, or waste that, because of its quantity, concentration, or physical or chemical characteristics poses a significant present or potential hazard to human health and safety or to the environment, including, but not limited to, petroleum, petroleum-based products, natural gas, or any material, substance or waste that shall be listed, regulated or defined by federal, state or local statute, regulation, rule, ordinance or other governmental requirement to be hazardous, acutely hazardous or extremely hazardous, toxic, radioactive, biohazardous or otherwise dangerous. Nor will the University be responsible for toxic or hazardous materials found on the property subsequent to the effective date of this Agreement, in the event that the presence of

**such materials does not result from University negligence.** The Forest Service hereby represents and warrants that at the time of execution of this Agreement, there are no known areas on the OCEF site on which hazardous materials have been used, stored or deposited. On the CSSL site all hazardous materials have been removed in accordance with State and Federal EPA and Cal-OSHA regulations. The University will comply with all applicable laws concerning the handling, storage, or discharge of hazardous materials on the CSSL/OCEF sites.

12. Permit the free and unrestricted access to and upon the premises at all times for all lawful and proper purposes consistent with the intent of this Agreement.
13. The University shall defend, indemnify, and hold the Forest Service, its officers, employees and agents harmless from and against any and all liability, loss, expense (including reasonable attorneys' fees), or claims for injury or damages arising out of the performance of this Agreement, but only in proportion to, and to the extent such liability, loss, expense, attorneys' fees, or claims for injury or damages are caused by or result from the negligent or intentional acts or omissions of the University, its officers, employees or agents.
14. Assist the Forest Service in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 USC 470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 USC 469a-1 et seq.)
15. Clean culverts on the OCEF access road on at least a yearly basis to prevent damage to roads, culverts, and the site.
16. Charge Forest Service quarters (rent) to personnel and visitors/cooperators who reside or visit the CSSL, and report such quarters use on a quarterly basis to the Forest Service Budget & Financial Management Office at P.O. Box 245, Berkeley, CA 94701.
17. Pay utility costs, including electricity, propane gas, and garbage collection, for structures and facilities at the CSSL. Payments of said utility charges will be made by the University directly to the utility companies.
18. The University in compliance with Titles VI and VII of the civil Rights Act of 1964, Title IX of the Education Amendments of 1972,

Sections 503 and 504 of the Rehabilitation Act of 1973, the Age Discrimination in Employment Act of 1967, the Age Discrimination Act of 1975 and the Americans with Disabilities Act of 1990, does not discriminate on the basis of race (including racial harassment), color, national origin, religion, sex (including sexual harassment), physical or mental disability, or age in any of its policies, procedures, or practices nor does the University, in compliance with section 402 of the Vietnam Era Veterans Readjustment Act of 1974, and Section 12940 of the State of California Government Code, discriminate against any employee or applicants for employment because they are special disabled veterans or veterans of the Vietnam Era or because of their medical condition (cancer-related) as defined in Section 12926 of the California Government Code, their ancestry, or their marital status; nor does the University discriminate on the basis of sexual orientation.

19. Upon termination of this Agreement, the University may remove any fixtures, machinery and equipment installed at CSSL/OCEF by the University. The University shall remove, within a reasonable period of time, all other property placed at CSSL/OCEF by the University except those owned by the United States government or except as agreed to by the parties in writing. The University shall restore the site, to the extent practicable and feasible, alterations approved by the Forest Service excepted.

#### **B. THE FOREST SERVICE AGREES TO:**

1. Assign the Project Leader of the Station's Research Work Unit PSW-4451 as Coordinator for research, education, and other activities at the CSSL/OCEF.
2. Collaborate with the University in the development of a mutually acceptable operations plan and research plan for research and educational program projects. (As per 5b and 5c above.)
3. Conduct all research programs in accordance with the University-developed research plan and in accordance with University policies and procedures to the extent allowable under Forest Service policies and procedures.
4. Maintain, with the assistance of other Forest Service offices, the CSSL driveway and the OCEF weir access road, as outlined in Exhibit A attached hereto and made part of this Agreement.

5. Provide fire protection to the OCEF as is currently done through the Tahoe National Forest, Truckee, California.
6. Collaborate with the University in the preparation of an annual fire plan for the CSSL.
7. Loan scientific equipment to the University in order to continue the Long-Term Data Collection outlined in Exhibits C and D attached hereto and made part of this Agreement. Such loan will be documented by the form AD-107, Report of Transfer or Other Disposition or Construction of Property, attached as Exhibit F and made part of this Agreement, which requires that a yearly inventory of equipment be kept by the University.
8. Provide to the University for maintenance purposes supplies, materials, and/or services of at least a value equivalent to CSSL-generated quarters rental income which will be collected by the Forest Service. Additional Forest Service funds may be expended for maintenance in any given Federal fiscal year.
9. Permit free ingress and egress of authorized personnel of the University, and other research users as may be mutually agreed upon, for the purposes of conducting research and educational programs specified in the research plan.
10. In the event that allegations of liability are brought against the University by claim, suit or otherwise, the University retains the right to pursue any rights or remedies it may have, including joinder of the United States as a party, to the extent such rights or remedies exist under the Federal Tort Claims Act, 28, U.S.C. §2671 et.seq.

**C. IT IS FURTHER AGREED BY BOTH PARTIES:**

1. **That this Agreement is consistent with and supplements the Memorandum of Understanding of January 1, 1959, Agreement #12-11-0005-20172, between The Regents of the University of California, and the Forest Service, U.S.D.A., incorporated herein as Exhibit G.**



2. That CSSL/OCEF will be managed and maintained as a dedicated research and educational facility, available to organizations expressly for research and educational purposes consistent with the needs and mission of both the University and the Forest Service.
3. That the University will impose no barriers to increased research use of the CSSL/OCEF by the Forest Service provided that such use is mutually agreed upon in the research plan.
4. That in the event that the University cannot adequately maintain and protect the improvements and site of CSSL, as set forth in the annual plan and as may be mutually agreed upon, the University will request the Forest Service to perform maintenance or other activities.
5. The Forest Service and the University will meet each September or more often as needed to (1) review policies and activities of the CSSL/OCEF; and (2) to review and discuss operational and research plans for the current and next 12-month period.
6. That research data and findings by either party will be available upon request to the other. Researchers are to be advised of this condition in advance of undertaking research projects so that the results of research may be used in partial fulfillment of requirements for academic degrees.
7. That both parties may employ maintenance worker(s), provide other labor and materials as necessary for upkeep of existing improvements at the CSSL to such quality that educators and public and private land managers will be encouraged to use the facility, in accordance with the operating plan and as may be mutually agreed upon.
8. That equipment, supplies and materials of any kind, exclusive of permanent improvements which are Forest Service owned, provided by the Forest Service and/or the University to facilitate research and educational program projects shall remain the property of each respective party.
9. That the United States shall not be liable for any damage incident to the performance of work under this Agreement to any Forest Service cooperators, and all such cooperators shall be asked by the United States to waive any and all claims against the United States of America for compensation for any loss, damage, personal injury or


death occurring in consequence of the performance of this Agreement.

10. That this Agreement may be terminated by either party giving written notice one year in advance of the proposed effective date of termination. Unless terminated in writing, this Agreement shall remain in effect until December 31, 2015. Furthermore, in the event that the Forest Service determines that the public interest requires termination of this Agreement, it is understood that the University will not be required to perform maintenance to the designated structures and facilities during the year's duration after such notice. In the event that the Agreement is terminated, both parties will give every possible consideration to the needs of research projects underway at the time.
  
11. This instrument is neither a fiscal nor a funds obligation document. Any endeavor involving reimbursement or contribution of funds between the parties to this instrument will be handled in accordance with applicable laws, regulations, and procedures including those for Government procurement and printing. Such endeavors will be outlined in separate agreements that shall be made in writing by representatives of the parties and shall be independently authorized by appropriate statutory authority. This instrument does not provide such authority. Specifically, this instrument does not establish authority for noncompetitive award to the cooperator of any contract or other agreement.
  
12. The principal contacts for this Agreement are:  
  
Joseph Cerny, Vice Chancellor for Research  
University of California, Berkeley  
119 California Hall  
Berkeley, CA 94720-1500  
  
Hal Salwasser, Director  
Pacific Southwest Research Station  
USDA Forest Service  
800 Buchanan Street  
Albany, CA 94710
  
13. It is expected that both parties shall comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the

National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 USC sections 1451 et seq.); (f) conformity of Federal actions to State (Clear Air) Implementation Plans under Section 176(c) of the Clear Air Act of 1955, as amended (42 USC Section 7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended, (P.L. 93-523); and (h) protection of endangered species under the Endangered Species Act of 1973, as amended, (P.L. 93-205).

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their duly authorized representatives on the date first above written.

U.S. DEPARTMENT OF AGRICULTURE  
PACIFIC SOUTHWEST RESEARCH STATION

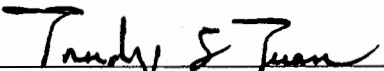
By 

Hal Salwasser

Its: Station Director

Date JAN 29 1998

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA


By 

Trudy S. Tuan

Its: Director, Materiel Management

Date 1/23/98

Approved as to Legal Form:

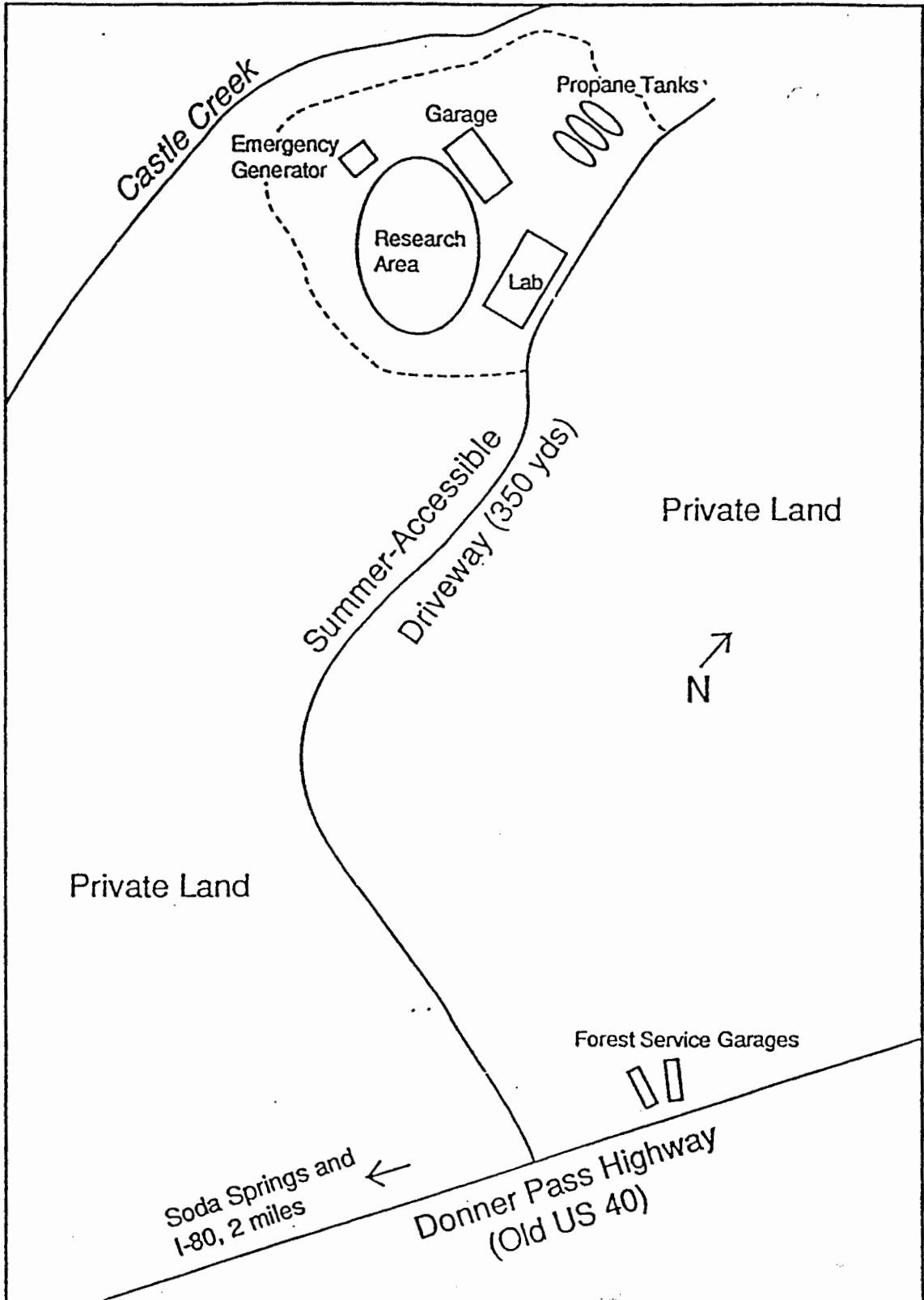
By 

Michael R. Smith

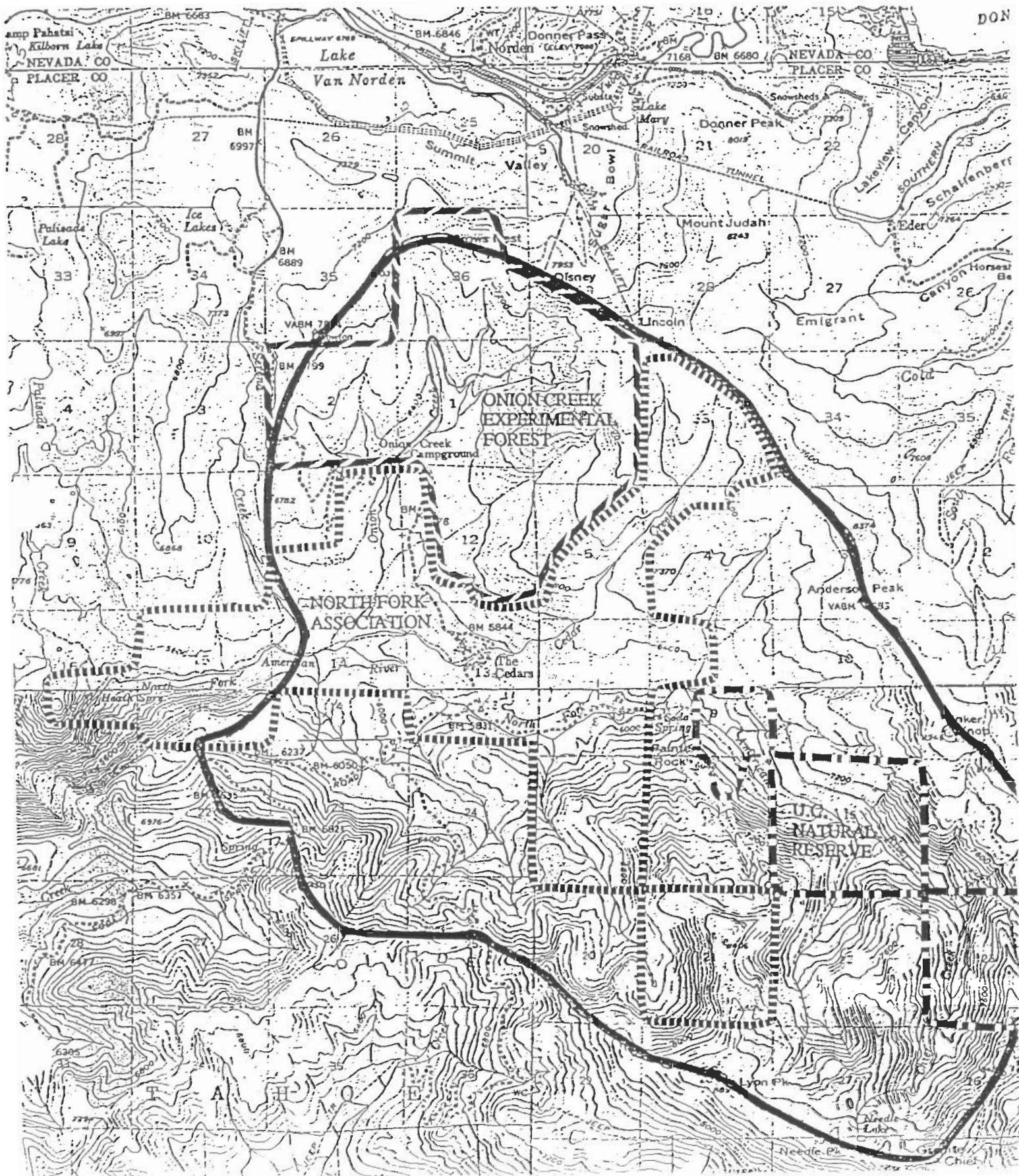
Assistant Chancellor-Legal Affairs

Date 1/22/98

1. Location of Central Sierra Snow Laboratory and facilities, near Soda Springs, Nevada County, California. (not to scale)



2. Location of U.S.D.A. Forest Service Onion Creek Experimental Forest, University of California Chickering Natural Reserve, and North Fork Association land in the headwaters of the North Fork American River, Placer County, California.



CENTRAL SIERRA SNOW LABORATORY  
METEOROLOGY WORK SHEET

MONTH FEBRUARY  
YEAR 1995

C

DAY	TEMPERATURE		PRECIPITATION (mm)					SNOW (cm)			
	MAX	MIN	CHART READ	24 HR TOTAL	SEASON TOTAL	TYPE		NEW SNOW	SEASON TOTAL	WATER CONTENT	WATER CONTENT
						% SNOW	% RAIN				
1	7	-2	178	6	1328		100	0.0	853.9	293.0	—
2	12	-4		0						288.0	122.2
3	13	-3								—	—
4	14	-3								—	—
5	14	-3								—	—
6	11	-2	↓	↓	↓					275.5	123.8
7	9	-2	179	1	1329	100		↓		271.5	—
8	3	-2		T		100		T 0.0		270.0	121.3
9	9	-4		0				T 0.0		270.0	—
10	9	-6								267.5	119.9
11	7	-6	↓	↓	↓					—	—
12	1	-3	183	4	1333	100		↓ T	↓	—	—
13	-3	-7	243	60	1393	100		14.2 14.2	868.1 882.3	268.0	—
14	0	-16	244	1	1394	100		18.4 0.0	900.7	309.5	124.9
15	8	-14		0						301.0	—
16	6	-9		0						295.0	127.7
17	7	-3		T			100			291.0	129.7
18	13	-4		0						—	—
19	18	-5								—	—
20	18	-3								—	—
21	15	-3								274.0	129.1
22	13	-2								269.5	—
23	16	-2								265.5	127.3
24	13	-3								261.0	—
25	13	-3								—	—
26	11	-4								—	—
27	11	-3		↓						254.5	122.0
28	9	-1	↓	T	↓		100	↓	↓	—	—
TOTALS				72				46.8			

COMMENTS T = trace (less than 1mm precip; less than 0.5 cm snow)  
\* = chart adjust

## HOURLY MET DATA

The meteorological data collected at the Central Sierra Snow Lab are stored in monthly files. The file names are METDB.date for the Open site data and METDB.date.F for the Forest site data. The files contain hourly records with the first 5 columns for date information:

COLUMN	VAR NAME	DESCRIPTION
1	MM	Month (12)
2	DD	Day (13)
3	YY	Year (13)
4	JJJ	Julian date based on Jan 1st (14)
5	HR	Hour (Pacific Standard Time) (13)

The date columns are the same for both Open and Forest site files  
The remaining Open site columns are as follows:

6	S	Sample Percentage (100% = 60 scans/hour) (14)
7	OGAIR	Open Ground Air Temperature (C) (F6.1)
8	OGDEW	Open Ground Dewpoint Temperature (C) (F6.1)
9	OGRH	Open Ground Relative Humidity (14)
10	OGW	Open Ground Wind Speed - Horizontal (m/s) (F7.2)
11	OGWD	Open Ground Wind Direction (degrees)(14)
12	OGNET	Open Ground Net Radiation-Short Wave (ly/min) (F7.2)
13	OGINC	Open Ground Incident Radiation-Short Wave (ly/min) (F7.2)
14	OGREF	Open Ground Reflected Radiation-Short Wave (ly/min) (F7.2)
15	OGDIF	Open Ground Diffused Radiation-Short Wave (ly/min) (F7.2)
16	OALB	Open Albedo (%) (14)
17	OIRT	Open Infrared Snow Surface Temperature (C) (F6.1)
18	OGWV	Open Ground Wind Speed - Vertical (m/s) (F7.2)
19	OGWVR	Open Ground Wind Vertical Run (m) (F7.1)
20	OEWS	Open Elevated Wind Speed - Horizontal (m/s) (F7.2)
21	OEWD	Open Elevated Wind Direction (degrees) (14)
22	OEWV	Open Elevated Wind Speed - Vertical (m/s) (F7.2)
23	OEWVR	Open Elevated Wind Vertical Run (m) (F7.1)
24	PPTINC	Precipitation increment for the hour (CM) (F8.2) (Note: depth in INCHES from 83-86, cm in 87 and on)
25	OEAIR	Open Elevated Air Temperature (C) (F7.1)
26	OEDEW	Open Elevated Dewpoint Temperature (C) (F6.1)
27	OERH	Open Elevated Relative Humidity (%) (14)
28	OEINC	Open Elevated Incident Radiation-Short Wave (ly/min) (F7.2)
29	OGIR	Open Ground Infrared Rad. (ly/min) (F7.2)
30	OGWV	Open Ground Long Wave Rad. (ly/min) (F7.2)

The following describes the remainder of the Forest site columns.  
The first five columns are the date columns described above.

COLUMN	VAR NAME	DESCRIPTION
6	S	Sample Percentage (100% = 60 scans/hour) (14)
7	FAIR	Forest Air Temperature (C) (F6.1)
8	FDEW	Forest Dewpoint Temperature (C) (F6.1)
9	FRH	Forest Relative Humidity (%) (14)
10	FGW	Forest Ground Wind Speed - Horizontal (m/s) (F7.2)
11	FGWD	Forest Ground Wind Direction (degrees) (14)
12	FNET	Forest Net Radiation (ly/min) (F7.2)

Each variable is reported as an hourly average, and each instrument is scanned by the datalogger at 5 minute intervals.

HOURLY MET DATA, continued

COMMENTS - CSSL OPEN SITE MET DATA BASE - JAN. 73  
 - HEAVY SNOW EARLY PART OF MONTH. NUMEROUS SNOW COVERED RADIOMETERS,  
 PRECIP RECORD FROM SOUTH TOWER TURNED OFF, ENTIRE MONTH. USE NORTH  
 TOWER RECORD INSTEAD FOR MONTH.  
 - NO PRECIP GAUGE RECORD FOR 1-4 JAN. 64 MM ON 1 JAN, NO MORE UNTIL  
 5 JAN WHEN NORTH TOWER WAS WORKING AGAIN.  
 - RAIN ON 1/6 AND 1/7, PANS STARTED TO TIP ON 1/7 AT 0700, THROUGH 9TH  
 MORE RAIN ON 12-13, AND ON 21ST, WITH OCCASIONAL PAN OUTFLOW IN BETWEEN.  
 - WHEN SNOW OCCURRED, INCIDENT RAO OFFER LESS THAN REFLECTED RADIOMETER.  
 LEADS TO ALBEDOS IN EXCESS OF 100. LEFT IN AS IS.  
 - NO DATA FROM 1/12, 1800 HRS TO 1/20, 1800 HRS. CAUSE UNKNOWN.  
 - NO. TOWER P GAUGE CHARGE CHANGE, 1/23, 1700 HRS. CHARGE ADDED 1/31,  
 1700 HRS. VALUES IN ELECTRONIC RECORD RESET TO 0.

1	1	93	1	0	100	-3.1	-3.9	94	.00	.00	0	-99.9	0	-99.9	-0.2	-99.9	1.30	255	-99.99	-99.9	-99.9	-3.6	-3.6	100	-99.99	.00	.43	-99.9
1	1	93	1	1	100	-2.5	-3.3	94	.42	272	.00	.00	0	-99.9	.14	-99.9	1.82	213	-99.99	-99.9	-99.9	-3.2	-3.2	100	-99.99	.00	.43	.0
1	1	93	1	2	100	-2.4	-3.2	94	.05	90	.00	.00	0	-99.9	.00	-99.9	2.28	223	-99.99	-99.9	-99.9	-3.1	-3.1	100	-99.99	.00	.44	.0
1	1	93	1	3	100	-2.3	-3.1	94	.08	346	.00	.00	0	-99.9	.21	-99.9	1.93	211	-99.99	-99.9	-99.9	-3.0	-3.0	100	-99.99	.00	.44	.0
1	1	93	1	4	100	-2.4	-3.2	94	.08	194	.00	.00	0	-99.9	.00	-99.9	1.76	234	-99.99	-99.9	-99.9	-3.1	-3.1	100	-99.99	.00	.44	.7
1	1	93	1	5	100	-2.8	-3.6	94	.35	267	.00	.00	0	-99.9	.09	-99.9	1.34	242	-99.99	-99.9	-99.9	-3.5	-3.5	100	-99.99	.00	.63	1.8
1	1	93	1	6	100	-2.7	-3.5	94	1.04	268	.00	.00	0	-99.9	.14	-99.9	2.72	263	-99.99	-99.9	-99.9	-3.4	-3.4	100	-99.99	.00	.43	3.1
1	1	93	1	7	100	-2.5	-3.3	94	.46	214	.00	.00	0	-99.9	.14	-99.9	1.45	242	-99.99	-99.9	-99.9	-3.2	-3.2	100	-99.99	.00	.43	9.2
1	1	93	1	8	100	-2.1	-2.9	94	.08	153	.00	.00	0	-99.9	.00	-99.9	2.60	215	-99.99	-99.9	-99.9	-2.9	-2.9	100	-99.99	.00	.44	8.0
1	1	93	1	9	100	-2.0	-2.8	94	.35	238	.00	.00	0	-99.9	.16	-99.9	2.88	220	-99.99	-99.9	-99.9	-2.8	-2.8	100	-99.99	.00	.44	4.5
1	1	93	1	10	100	-2.5	-3.3	94	.31	118	-.01	.00	0	-99.9	.00	-99.9	3.34	249	-99.99	-99.9	-99.9	-3.2	-3.2	100	-99.99	.00	.44	.2
1	1	93	1	11	100	-3.4	-4.2	94	.37	200	-.01	.00	0	-99.9	.21	-99.9	2.22	226	-99.99	-99.9	-99.9	-4.1	-4.1	100	-99.99	.00	.63	1.1
1	1	93	1	12	100	-3.9	-4.7	94	.22	275	-.01	.00	0	-99.9	.09	-99.9	1.79	237	-99.99	-99.9	-99.9	-4.6	-4.6	100	-99.99	.00	.63	-.2
1	1	93	1	13	100	-4.3	-5.2	93	.04	207	-.02	.00	0	-99.9	.00	-99.9	.92	203	-99.99	-99.9	-99.9	-5.0	-5.0	99	-99.99	.00	.43	.2
1	1	93	1	14	100	-5.2	-6.1	93	.23	284	-.05	.03	0	-99.9	.00	-99.9	.84	228	-99.99	-99.9	-99.9	-5.9	-6.0	99	-99.99	.00	.63	.0
1	1	93	1	15	100	-5.6	-6.5	93	.07	124	-.03	.00	0	-99.9	.00	-99.9	1.26	228	-99.99	-99.9	-99.9	-6.3	-6.4	99	-99.99	.00	.43	.0
1	1	93	1	16	100	-5.8	-6.7	93	.10	248	-.01	.00	0	-99.9	.00	-99.9	1.07	202	-99.99	-99.9	-99.9	-6.5	-6.6	99	-99.99	.00	.42	.0
1	1	93	1	17	100	-6.8	-7.8	92	.09	90	.00	.00	0	-99.9	.00	-99.9	.50	218	-99.99	-99.9	-99.9	-7.3	-7.5	98	-99.99	.00	.41	-.2
1	1	93	1	18	100	-7.1	-8.1	92	.00	0	.00	.00	0	-99.9	.00	-99.9	.36	235	-99.99	-99.9	-99.9	-7.7	-7.9	98	-99.99	.00	.41	.0
1	1	93	1	19	100	-7.6	-8.6	92	.00	0	.00	.00	0	-99.9	.00	-99.9	.14	231	-99.99	-99.9	-99.9	-8.2	-8.5	98	-99.99	.00	.40	.2
1	1	93	1	20	100	-7.7	-8.7	92	.00	0	.00	.00	0	-99.9	.00	-99.9	.01	186	-99.99	-99.9	-99.9	-8.3	-8.6	98	-99.99	.00	.40	.0
1	1	93	1	21	100	-7.7	-8.7	92	.00	0	.00	.00	0	-99.9	.00	-99.9	.01	197	-99.99	-99.9	-99.9	-8.3	-8.6	98	-99.99	.00	.40	-.2
1	1	93	1	22	100	-8.4	-9.5	92	.00	0	.01	.00	0	-99.9	.00	-99.9	.01	169	-99.99	-99.9	-99.9	-8.6	-8.9	97	-99.99	.00	.40	.2
1	1	93	1	23	100	-12.4	-13.7	90	.00	0	.02	.00	0	-99.9	.00	-99.9	.31	37	-99.99	-99.9	-99.9	-11.3	-11.9	95	-99.99	.00	.39	.0



## CENTRAL SIERRA SNOW LABORATORY COOPERATORS

## Types of Cooperation:

The Central Sierra Snow Laboratory is involved with a wide variety of state and federal agencies, universities and colleges, utility districts, transportation groups, and private individuals. The involvement spans the range from providing occasional meteorological data to having major studies sponsored by an outside agency (or groups of agencies) with staff and/or equipment that is operated for one or more winters. The following list is not all inclusive, but represents the typical cooperative interactions that have taken place during the last 3-5 years.

## Simple Data Requests:

Truckee Ranger District, USFS  
Southern Pacific Railroad  
XXXX Radio Station, San Francisco  
YYYY Televation, Reno

## Interchange of Long-Term Monitoring Information

Desert Research Institute  
Sierra Nevada Aquatic Research Laboratory, UC Santa Barbara

## Host to Long-Term Instrumentation

Natural Resources Conservation Service, USDA - SNOTEL site, 1 of 114 in western US  
California Air Resources Board, State of California - Atmospheric deposition sampler, one of 85 in state-wide network

## Special Studies Aimed at Improving Hydrometeorological Instrumentation

Cooperative - NRCS and Cal. Dept. of Water Resources - comparison of 2 types of snow sensors  
Lundahl Instruments, Logan Utah - evaluation of sonic depth sensors for potential use to measure snowpack accumulation and ablation  
ETI Inc, Ft. Collins, Colorado - evaluation of pumping/weighing precipitation gauges in mountain conditions



12-11-005-20172

MEMORANDUM OF UNDERSTANDING  
BETWEEN  
THE REGENTS OF THE UNIVERSITY OF CALIFORNIA  
AND  
UNITED STATES DEPARTMENT OF AGRICULTURE,  
FOREST SERVICE

THIS MEMORANDUM OF UNDERSTANDING, made and entered into this 1st day of January, one thousand nine hundred and fifty-nine, by and between the Regents of the University of California, hereinafter referred to as the "University", and the Forest Service, United States Department of Agriculture, through the Director of the California Forest and Range Experiment Station, hereinafter referred to as the "Forest Service", witnesseth:

WHEREAS, the University is organized and maintained in the State of California, to conduct a program of education and research and public service designed to benefit all people of the State, including owners and operators of forest land and dependant industries, and

WHEREAS, the Forest Service, as an agency of the Federal Government, is responsible for and conducts a program of forest research of use and value to owners and operators of forest land and dependant industries in California, and

WHEREAS, distinct advantages will accrue by correlating and coordinating respective programs of both parties,

NOW, THEREFORE, in consideration of the above premises and in the interest of mutual advantages in attainment of common objectives, the parties hereto desire to cooperate and mutually agree as follows:

FIRST, that the University shall:

1. Whenever and wherever practicable, provide without cost to the Forest Service temporary use of laboratory space and equipment for research of mutual interest under conditions to be mutually agreed upon.

2. Make University, forest and other lands available for experimental use by the Forest Service under conditions to be mutually agreed upon from time to time and whenever practicable, assist in the establishment and maintenance of investigations thereon undertaken by the Forest Service.

SECOND, that the Forest Service shall:

1. Whenever and wherever practicable provide without cost to the University temporary use of laboratory space and equipment for research of mutual interest by its students--under conditions to be mutually agreed upon.

2. Make experimental forests and other field research facilities available for experimental use by the University under conditions to be mutually agreed upon from time to time and, whenever practicable, assist in the establishment and maintenance of investigations thereon undertaken by the University.

3. Present from time to time such lectures on forestry and such assistance and advice in the work of graduate students in forestry and related fields of mutual interest as the University may request, provided such lectures and assistance will not interfere unduly with the work of the Forest Service.

THIRD, it is mutually agreed:

1. The University shall be represented on a committee which will advise the Forest Service on matters of policy and the program of the California Forest and Range Experiment Station. The Forest Service shall be represented on a committee which will advise the University on matters of policy and program of the Wildland Research Center. So far as practicable both parties will work in close cooperation in planning and executing investigations independently undertaken involving actual or possible use of land for forest growth, grazing and watershed protection and other forest problems.

2. That all members of the California Forest and Range Experiment Station organization, while on the property of the University, will be subject to the same regulations that apply to the members of the University staff, and the senior staff of the California Forest and Range Experiment Station will have the same privileges and perquisites as the University staff insofar as practicable and insofar as such regulations and privileges are not in conflict with those of the U. S. Department of Agriculture.

3. Senior scientists of the California Forest and Range Experiment Station shall be accorded the same library, club, and gymnasium privileges as the University staff.

4. That all improvements, equipment, materials, office furniture, and supplies provided at any time by either of the parties hereto shall remain the property and be subject to the disposal of the respective parties furnishing the same.

5. Subject to the limitations above, cooperative research work contemplated by this agreement is any type of such work which may be authorized by Federal laws in effect at time of performance. Specific working arrangements developed under this agreement will be governed by the appropriations available to the Forest Service, U. S. Department of Agriculture, and the laws governing the activities of the University of California. Cooperation in the conduct of specific research projects will be under provisions of the master memorandum of agreement for conducting forest and range research entered into June 15, 1954 and amendments thereto.

6. That in the performance of the terms of this agreement, no convict labor shall be used, and the University will comply with the provisions of the Eight-Hour Law (40 USC 324, 325a) as to the employment of laborers and mechanics.

7. No member of or delegate to Congress, or resident commissioner, shall be admitted to any share or part of this contract or to any benefit to arise therefrom unless it be made with a cooperation for its general benefit.

8. Either party may terminate this memorandum of understanding by providing one year's written notice. Unless terminated by written notice, this memorandum will remain in force indefinitely.

FOREST SERVICE, U. S. DEPARTMENT OF AGRICULTURE  
CALIFORNIA FOREST AND RANGE EXPERIMENT STATION

By Keith Arnold  
Director

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

By James H. Corley  
Title Vice President - Business Affairs  
of the University of California

APPROVED BY:

Paul J. Sharp  
DIRECTOR, CALIFORNIA  
AGRICULTURAL EXPERIMENT STATION

Date \_\_\_\_\_

Approved:

Frank W. Miller  
Frank W. Miller  
Ass't to the Business Manager  
Berkeley

APPROVED AS TO FORM:

Mark Owens, Jr.  
MARK OWENS, JR.  
ASSISTANT COUNSEL OF THE REGENTS  
OF THE UNIVERSITY OF CALIFORNIA