MANAGEMENT PLAN

VALENTINE CAMP

UNIVERSITY OF CALIFORNIA, SANTA BARBARA

NATURAL RESERVE SYSTEM

ADOPTED MAY 4, 1999

SUMMARY

Valentine Camp, located in Mono County, is one of the most dramatic sites in the University of California's Natural Reserve System (NRS). Although small (150 acres), Valentine Camp contains some of the most pristine subalpine montane habitat in the Sierra Nevada. In addition to on-site research, Valentine provides a base of operations for research and instruction on public lands in the surrounding region. Located in the eastern Sierra Nevada, users of the Reserve have access to a 13,000-foot elevational gradient ranging from Mojave and Great Basin Desert habitats to alpine tundra. Valentine Camp is administered jointly with SNARL as the Valentine Eastern Sierra Reserve (VESR) by the University of California, Santa Barbara.

This plan identifies the goals, objectives, status and limitations of the various programs at Valentine Camp. Opportunities exist to increase research use and productivity, instructional use, and various public service uses, including K-12 education. There are pressing needs for additional environmental monitoring, database management and facilities development. The latter will require aggressive and creative fundraising efforts.

The plan strongly supports the need for additional staffing at VESR. Non-recurring funds are being used for a seasonal maintenance worker (Cabot Thomas), an environmental monitoring technician (Peter Kirchner), a Database Manager (Robert Jellison), the Education Coordinator (Leslie Dawson), and the Education Assistant (Sherry Taylor). These positions are all critical to VESR operations and permanent funding for them needs to be consolidated. There are also important non-recurring needs. With one-time funding of $90,000 all the high priority, non-recurring needs identified in this plan could be addressed.

PURPOSE AND SITE SIGNIFICANCE

1. NRS Mission: The mission of the Natural Reserve System is to contribute to the understanding and wise management of the Earth and its natural systems by supporting university-level teaching, research, and public service at protected natural areas throughout California.

2. Reserve Purpose: The primary mission of Valentine Camp is to facilitate research and academic instruction in the field sciences. This mission is accomplished by providing protected habitats, access to public land, experimental facilities, limited laboratory facilities and equipment, housing, various databases and liaison with local, State and Federal agencies. A secondary purpose is representing the University of California and its general interests to agencies, schools, and the general public in a part of the state without substantial University representation.

3. Site Significance: Valentine Camp offers a diverse array of habitats in a relatively small

reserve. Montane forest, montane chaparral, Great Basin sagebrush, riparian vegetation, wet montane meadow vegetation, seep and spring vegetation, and aquatic habitats, all in remarkably pristine condition, are present on the reserve. Because Valentine Camp has been protected for over 70 years, teaching and research opportunities are great. Further, the property lies adjacent to the Town of Mammoth Lakes creating an interesting set of urban/wildland interface issues related to forest, fire, wildlife, and exotic pest management. The Reserve has excellent facilities including 3 researcher cabins, one small laboratory, a caretaker's residence, trails, and bridges.

Valentine Camp provides a base of operations for instruction and research on a highly diverse array of natural features on public lands in the surrounding region. Over 90% of the surrounding two-county region is in public (or Los Angeles Department of Water and Power) ownership, including extensive Forest Service, National Park Service, and Bureau of Land Management holdings. The Ansel Adams and John Muir Wilderness areas, managed by the Forest Service, are close to the reserve. The region's 13,000-foot elevational gradient encompasses a range of habitats from Mojave and Great Basin Desert to alpine tundra. Aquatic habitats are equally diverse, ranging from isolated desert springs (some thermal) and hypersaline Mono Lake to dilute alpine lakes.

Valentine Camp is 12 miles from SNARL, which is the most highly developed site in the NRS. All SNARL facilities including lab equipment, animal quarters, and computing facilities are available to Valcamp users.

4. Goals of the Reserve:
   a. Provide facilities and natural resources to support research and teaching in eastern, central California.
   b. Develop, upgrade, and maintain facilities and databases to support research and instruction.
   c. Protect and monitor on-site natural resources.
   d. Provide public outreach and education to the extent possible.
   e. Develop research opportunities through coordination with public agencies.
   f. Serve the public by coordinating with and advising resource management agencies.

5. Trends, Opportunities and Limitations for Management and Use: In recent years on-site research and teaching use of Valentine Camp has been low (Appendix A). Although there are periods of high occupancy, much of this use is either as overflow housing from SNARL or as a base for off-site research. Use of the Reserve for the VESR Outdoor Science Education Program has been the dominant on-site use of the Reserve. In summer 1997, we offered 6 summer school courses to 55 students. In fall 1997, 676 students and teachers from 8 schools in 5 districts visited the Reserve on field trips.

There is opportunity for increased on-site use for both teaching and research. At this time, we have a maximum housing capacity of 17 people but we plan to increase this to 25 in the near future. At this level, some field classes may be accommodated when there are no researchers in residence. Day use by public groups, classes, and school groups is hampered by the lack of restroom facilities outside the residences, which are frequently occupied. There is also a need for indoor instructional space for projects and for breaks during cold weather. We have developed plans to construct a science center to meet all of these needs.

Additional facility construction may be limited by inadequate infrastructure. Although water and sewer lines are adequate the underground electrical service may be inadequate to accommodate new construction or even substantial upgrades to the existing electrical service in

the cabins.

6. Purpose of this Plan:
   a. To establish Valcamp's position as an important teaching and research resource in the University of California.
   b. To justify additional UC financial resources for Valcamp development, maintenance, and resource monitoring.
   c. To establish priorities for Reserve facilities development, staffing, and programs.
   d. To allow Valcamp and its researchers to successfully compete for extramural funds.
   e. To identify health and safety hazards, gaps in databases, and staffing and maintenance problems.

7. Plan Implementation and Update: The implementation of this plan is on-going and largely determined by the limited field season, staff time, and budget constraints. A proposed timeline is attached as Appendix M. Although this plan is the first comprehensive planning effort for Valentine Camp, the policies described in this plan already govern most management decisions for the Reserve. This plan should be updated within five years.

INVENTORY AND DESCRIPTION

1. Purpose: To provide users, prospective users, and other interested parties with descriptive information about the resources on the property and in the Mammoth Lakes region.

2. Natural Resources: Valcamp is bowl-shaped with a variety of aspects and changes in elevation resulting in high habitat diversity (Appendix B).

Habitats:	Sierran upper montane forest, Sierran upper montane chaparral, Great Basin sagebrush, high montane riparian vegetation, wet montane meadow vegetation, sagebrush-meadow vegetation, and seep and spring vegetation.
Topography:	Varied, including low-lying, spring-fed meadows; gently sloping glacial moraine; steep north-, east- and south-facing slopes.
Soils:	loamy skeletal, coarse loamy, sandy skeletal, bog, meadow, thixotropic, and mixed soils.
Geology:	Rhyodacite, andesite, alluvial and glacial deposits all overlain in places by several meters of pumice.

Species Diversity (Appendix C):

Vascular Plants	255 taxa (94.5% native)
Amphibians	2
Reptiles	4
Mammals	26
Birds	91

3. Inventory Status:

Archeology: a survey conducted in 1997 in the lodgepole forest revealed two chipping sites. There is also a known grinding stone on the property, but no complete survey of archeological resources has been undertaken.

Botany: a published flora (1981). Update (in progress) to be completed in early 1999. Voucher specimens are maintained at the UCSB herbarium and at SNARL.

Entomology: an incomplete collection of terrestrial invertebrates. No list of aquatic invertebrates.

Mammals: a brief list, possibly incomplete, posted on our Web site (Appendix C).

Birds: reasonably complete list, posted on our Web site (Appendix C).

Amphibians: a brief list, possibly incomplete, posted on our Web site (Appendix C).

Reptiles: a brief list, possibly incomplete, posted on our Web site (Appendix C).

Fish: a brief list, posted on our Web site (Appendix C).

Hydrology: discharge records for Mammoth Creek from 1936-present are available from LADWP although the measuring point is at old US 395 approximately 2.5 miles downstream from Valcamp. There are more recent hydrological records for Mammoth Creek from Old Mammoth Road (0.5 mi. downstream) and the Twin Lakes spillway (.25 mi. upstream) available from the Mammoth Community Water District (MCWD). Spring discharge has been recorded for the Valentine Camp north springs from 1992-present, summers only. A flume to measure the summer spring discharge of the middle springs was installed in 1997.

Meteorology: no measurements are made on-site. Various measurements are recorded at SNARL (air temperature, humidity, wind speed and direction, total solar radiation, long wave infrared radiation, photosynthetically available radiation and precipitation), on Mammoth Mountain (the same as SNARL), at the USFS Visitors Center (minimum and maximum temperature, precipitation), at Lake Mary (precipitation), and at Mammoth Pass (snow depth and water equivalence). SNARL and Mammoth Mountain data are maintained in a database at SNARL. USFS data is available at the Mammoth Lakes Visitors' Center. Lake Mary and Mammoth Pass data are available from LADWP.

Water Chem. Stream chemistry data for Mammoth Creek and groundwater in the Mammoth area are available from the MCWD. Some limited Valentine Camp spring chemistry data are on file.

Soils: a soils map and accompanying report are on file.

Maps: 7.5^{o} and 15^{o} USGS topographical maps are available, and detailed topo maps and orthophoto maps are on file.

Aerial Photos: none on file.

4. Limitations, Needs and Justifications: Along with providing basic accommodations, laboratory space and equipment for users, we need to provide users with the information necessary to make their projects successful. This information may be long-term or detailed data that researchers need but cannot easily collect such as climate data, stream flow records, or species lists. Data need to be collected at Valentine Camp and managed and archived at SNARL. Lack of adequate staff is a major limiting factor in developing these databases.

INFORMATION MANAGEMENT PROGRAM

1. Purpose: To make resource inventories, monitoring data, regional databases, and publications readily available to users.

2. Goals:
   a. Maintain existing monitoring program and expand this program to meet current and future users' needs.
   b. Manage monitoring data so that they are archived and made easily available to interested parties.
   c. Capture all information from current and future research projects.
   d. Enhance the value of Valentine Camp as a research site.

3. Implementation:
   a. Develop permanent staffing to conduct environmental monitoring and manage databases for the Reserve.
   b. Expand the existing monitoring program to include additional parameters such as south spring discharge, standard meteorological measurements, and biotic indices.
   c. Develop or complete species lists and limited collections for insects, mammals, birds, reptiles, amphibians, and fish.
   d. Calibrate, test, and replace all sensors on a recurring basis.
   e. Collate all past Valcamp, SNARL, Mammoth Mountain Snow Site, and LADWP discharge data in an easily accessible database.
   f. Complete the Valcamp bibliography project so that we have an accessible database of all publications generated from research at Valcamp.
   g. Assemble copies of all publications resulting from research conducted at or based out of Valcamp, especially dissertations and theses, and make them accessible to users.
   h. Expand and organize the SNARL library; buy books already identified by VESR users and staff for acquisition.
   i. Develop a repository for regional aerial photographs.
   j. Develop a database of regional stream discharge data.

4. Program Status: We have embarked on an ambitious information management program. Dr. Robert Jellison, long-time staff researcher at SNARL, was hired in 1996 to develop a user-friendly fully relational database that will eventually include all of the monitoring data, metadata (data about the data), inventory, bibliographic and limited regional hydrologic data. The database design is essentially complete and all SNARL meteorological data and metadata have been incorporated into the database. Jellison is working with the database manager from the UCSB Institute for Computational Earth System Science (ICESS) to incorporate all available Mammoth Mountain Snow Site data into the database. Meteorological data from Cain Ranch and Pahoa Island at Mono Lake will be incorporated next. Additional monitoring and inventory data will follow.

Mr. Peter Kirchner was hired in 1996 to maintain and expand environmental monitoring at VESR. All sensors at the SNARL meteorological site have been calibrated or replaced and a new datalogger system, with short-haul modem to the main SNARL lab, was installed. At Valentine Camp, an insertion flow meter and datalogger were placed in the north springs in

1992. This system has operated with limited data gaps during the spring-to-fall period from 1992-to-present. In 1997, a flume, pressure transducer, and datalogger were installed downstream of the old wooden flume in the Valentine Camp meadow to gauge the combined output of the middle springs. Because the pressure transducer cannot withstand freezing no winter flow monitoring is being conducted.

The clearest assessment of the value of Valcamp for research comes from its research output. This value is most easily quantified by research publications, symposia proceedings, theses, and reports that are generated from Valcamp research. It is vital that we capture this elusive information for obtaining both internal and external funding for VESR projects. Publication lags several years behind field work and often researchers are no longer using the Reserve at the time their published work appears making it difficult to capture this information. Furthermore, the information must be managed for current and future users of the Reserve. Bibliographic data is currently in an Endnote database that will be linked to the VESR database. Copies of most peer reviewed publications, theses, and dissertations from Valcamp are on file at SNARL.

There is significant user demand for an improved library at SNARL, which would have great benefit for Valentine Camp users as well. Users would like to see a small collection of specialized books that relate directly to local research interests including field guides, keys and texts. Some reference books and journals will also be cataloged, however, the primary access to journals will be through the Internet. Presently, except for a handful of current books, library items are either dated or have been "misplaced". We have surveyed current users regarding useful titles and have started making those purchases. Working with a UCSB campus network programmer, we are attempting to set up a proxy server on campus. With this in place, VESR library users could access the full suite of electronic journals available at UCSB. As a repository for theses, reprints, aerial photos, relevant journals, and some texts, the library could become a valuable resource.

3. Limitations, Needs, Justifications: The primary limitation to information management is staff time. The responsibilities of the Resident Director far exceed the time he has available and non-critical but important tasks like these suffer. The Director already spends substantial time on the environmental monitoring program at SNARL, Valentine Camp, and Mammoth Mountain. Jellison will eventually have state-of-the-art information management on-line, but he is hired on temporary funds. Kirchner is likewise on temporary funds and his time has been limited to the maintenance of the existing monitoring program in order to extend the temporary funds allocated for both positions. Expansion of environmental monitoring will not take place until a funding source is identified. Consultation with a science librarian is needed to establish a new library organization plan.

RESEARCH SUPPORT PROGRAM

1. Purpose: The central mission of the Reserve is to support research in the field sciences in the central, eastern California region. To this end the reserve needs to provide housing, laboratory space, equipment, and logistical support as well as resource inventory and database support to enhance research opportunities.

2. Goals:
   a. Expand the amount of research conducted at Valentine Camp .
   b. Provide central facilities to support research throughout the region.

c. Provide logistical and database support to enhance research opportunities.
d. Work closely with local, State and Federal agencies and other groups to develop new research opportunities.

3. Implementation:
a. Develop strategies to inform potential new research users about Valentine Camp.
b. Expand equipment, facilities, and monitoring necessary to attract new users.

4. Constituencies (Existing and Potential):. Valentine Camp is well-suited for research on plant/animal interactions, avian biology, urban/wildland interface issues, stream ecology, forestry, and wildlife biology. It is the same distance from the UC campuses as SNARL yet supports far less research use. Current on-site research involves one graduate student dissertation project, cowbird vocalization research (with the birds captured off-site), and pollination ecology research by a faculty member and undergraduates from CA State University, Northridge.

5. Program Status: This plan has separate sections on Inventory and Description, Information Management Program, Facilities Management Program, and Equipment Acquisition Program. All of these programs support research. Refer to the appropriate section for more information.

For the past several years research use at Valentine Camp has been very limited. Housing there has been used, in part, as overflow for SNARL or as a base for regional research rather than to support on-site research.

In the past the reserve has been used extensively for research in pollination ecology, hummingbird territoriality, and the behavioral ecology of the Brown Headed Cowbird. A bibliography of publications resulting from work conducted at the reserve is attached as Appendix L.

EDUCATION SUPPORT PROGRAM

1. Purpose: Valentine Camp can serve as a base for college instruction in the field sciences. Existing class use is low but could be increased through promotion of the facilities and resources on-site. In addition to providing classes with basic accommodations, we should be providing them with resource inventories and local experts to aid class instructors. The reserve may become important as a site for lab group meetings, graduate classes, workshops, faculty collaborations, and sabbaticals.

2. Goals:
a. Provide facilities at Valentine Camp to support academic instruction that takes place throughout the region.
b. Expand the number of college and University classes using Valentine Camp.

3. Implementation:
a. Secure partial funding for the VESR Education Coordinator to allow her to support visiting classes by providing informational resources and locating local experts who may assist with teaching on the reserve.
b. "Advertise" to existing and potential constituencies the availability and excellence of our Reserve for teaching.

c. Coordinate with Cerro Coso Community College in Mammoth for using Valentine Camp for local junior college courses.
d. Promote additional UC Extension class use by coordinating with campus extension offices and suggesting course topics to local, qualified instructors.
e. Construct restroom facilities for day users of the Reserve.

4. Constituencies (Existing and Potential): Valentine Camp is far from any major college or university. Within California UCD, UCLA and UCR are approximately 300 miles from Valcamp, and UCSB is approximately 375 miles away; consequently university-level instructional use of the Reserve is low (Appendix A). Although there is year-to-year variation, the courses that use the Reserve consistently are listed below:

Santa Rosa JC	botany	25 students	undergrad	1 day
UCR Extension	botany	15 students	adult/undergrad	2 days
UCSC env. stud.	field quarter	25 students	undergrad	1 day

Even with the long travel distance Valcamp offers great opportunities for field classes and field trips. The quality, diversity, and accessibility of terrestrial and aquatic habitats are not duplicated elsewhere. With increased housing at Valcamp, or through use of the dorm and classroom at SNARL, the key elements for increased teaching use are in place. Potential constituencies which are unaware of Valcamp include the University of Nevada-Reno, CA State University-Stanislaus, CA State University-Bakersfield, and the future UC Merced.

5. Program Status: In 1995-96 instruction made up 9.8% of the use (by user-days) at Valcamp and accounted for 8.7% of the individuals that used Valcamp. While the number of user-days of instructional use in that period is typical of the last 5 years (Appendix A), the percentage of use it represents has gone down as use of the Reserve has grown. Although housing is frequently used by researchers, there are significant periods of time when housing at Valentine Camp would be available for University classes. There is an adequate classroom with audiovisual equipment at SNARL; however, there is no teaching lab for classes. The SNARL database center offers a limited number of computers that could be used by classes. Together, SNARL and Valentine Camp offer a great diversity of habitats for instruction. There is no campground, or plan to develop one at Valcamp because of the potential for environmental impacts, the lack of a suitable site, and the limited seasonal use. In the past, various summer courses, primarily geology summer field camps, have been permitted to camp at SNARL. New applications for this use will be considered case-by-case. The Green Church, located near SNARL, may be improved to allow for some inside "camping".

There is a strong campaign to develop a small, private college in Mammoth. There is currently a college foundation with a site and one building in Mammoth. It is anticipated that the proposed college will specialize in several areas related to the hospitality industry but also in some areas of resource management or environmental science. Links with this college program could substantially increase the college-level educational use of the Reserve with no additional burden on housing facilities.

Cerro Coso Community College operates an outreach program in Mammoth. This college offers a variety of classes and it is possible to obtain an AA degree in general studies. No classes from Cerro Coso use the reserve at this time.

6. Limitations, Needs and Justification: The single biggest limitation is staff time. At this point, there is no staff time available to promote class use, to act as a resource person for

classes or to organize class visits. Educational opportunities are currently being lost because VESR does not have the lab space to accommodate both research and teaching use. Given that much of the research based at VESR has a lab component, it follows that instruction in those disciplines would require a lab component. The quality of instruction and the level of undergraduate training would be greatly enhanced by access to lab space for demonstrations, student exercises, and research projects.

COMMUNITY EDUCATION PROGRAM

1. Purpose: To provide supplemental K-12 education and limited adult education in the field sciences in the eastern Sierra, and to provide limited public access to the Reserve, consistent with the University's public service mission.

2. Goals:
   a. Provide supplemental science education for students in Inyo and Mono County schools.
   b. Transfer University knowledge and provide University expertise to the public.
   c. Provide early training and create interest in the field sciences for future university students and scientists.
   d. When possible, introduce students to female and minority scientists.

3. Implementation:
   a. Develop programs and staff to provide field trips for all K-12 classes that would like to visit Valcamp.
   b. Provide one and two week summer school classes for grades 2-7.
   c. Provide summer school scholarships for approximately 5 economically-disadvantaged children per summer.
   d. Develop recurring support for the program either from DANR, UCSB, or by creating an endowment.
   e. Fund the program extramurally until permanent funding is established.
   f. Refine and expand the existing in-class program where Reserve staff visit local classrooms to provide pre or post field trip lessons.
   g. Conduct teacher training courses.
   h. Construct an Education Center at Valentine Camp to support the program.
   i. Develop short courses for adults in various aspects of natural history.
   j. Provide public tours of the reserve.
   k. Provide tours and other events for local public service groups (e.g. Rotary Club, Scouts)
   l. Maintain the existing public lecture series at the Green Church and consider expanding our offering of lectures to include invited speakers not necessarily conducting research at the reserves.

4. Program Status: We have been hosting a small number of informal field trips from local schools for many years. Some field trips were hosted by Dan Dawson, but most were supervised by Leslie Dawson acting as a volunteer. This informal program was not advertised and individual teachers (2-4 per year) made arrangements. In 1995, we started a pilot project to assess local interest, costs, impacts to other reserve users, and potential benefits of an expanded K-12 education program. Leslie Dawson was hired on Valentine Endowment funds to create an expanded program. Letters advertising the availability of the program were sent to

principals at all elementary and middle schools within a one hour drive of Valcamp. The pilot program was very popular with teachers, students, and parents and demand exceeded the available time slots. The cost has been reasonable and there has been general support from other reserve users. The public relations benefits, as evidenced by public comment, were overwhelmingly positive. The program was continued in 1996 while we sought extramural funding. We are able to run the field trip program for approximately $15K per year.

In calendar year 1997 we hosted approximately 1800 K-12 students at either SNARL or Valentine Camp. They came from 10 schools in 6 different districts, from as far away as Independence (90 miles). The program is limited to the 4 fall and spring months that overlap the school calendar: May, June, September, and October. Generally, the classes visit SNARL in the spring and Valentine Camp in the fall. A typical program consists of a short talk about the reserve and the NRS, an introduction to the topic of the day, a hands-on activity, and a short hike. Lessons at Valcamp cover forest health, fire ecology, wildlife, plant identification, and history.

The program was funded initially by endowment funds but it has been funded by grants since January 1998. In 1997, Dan Dawson, in partnership with the Inyo National Forest, submitted a proposal to the US EPA to fund the field trip program. The proposal was funded, and all of the funds have been passed from the Forest Service to the University through a Participation Agreement. The funds should be adequate to conduct the program through the fall, 1999. In addition, also in partnership with the Inyo NF, a small grant was awarded to VESR from the Eastern Sierra Interpretive Association (ESIA). ESIA is a private non-profit organization that operates all the book stores for the Forest Service in the eastern Sierra. A portion of their funds are set aside for education. They are funding a pilot program whereby Leslie Dawson and Sherry Taylor (VESR Education Assistant) visit classrooms of grades 1-5 at Mammoth Elementary school and provide either pre- or post-field trip lessons that set the stage or expand on the lessons learned on field trips to the reserves.

The summer school program at Valentine Camp has also been very successful. Modeled after a program at the Rocky Mountain Biological Lab, this program is largely self sufficient. In this program, students are charged a fee that offsets the salary and benefit costs for the instructor, as well as supplies and overhead required to run the program. In 1997, we offered 1-week classes for grades 2/3 and 1 and 2 week classes for grades 4/5 and 6/7. Total enrollment for the summer was 55 students. Fees vary according to the number of class hours which, in turn, varies across age groups. Fees range from $25 - $100. The program has been popular and, despite only word-of-mouth advertising, we are turning many students away.

In 1998 we made the decision to incorporate the Outdoor Science Education Program (described above) in a larger framework we are calling the Community Education Program. This program includes all aspects of public outreach including adult programs, reserve tours, and programs for local public service groups.

5. Limitations, Needs and Justification: K-12 education offers a broad, numerous, interested, and enthusiastic constituency. Contributions to K-12 education are valuable for providing learning experiences to children, and are consistent with the public service mission of the University. There are six elementary schools, two middle schools and four high schools within a one-hour drive of Valcamp.

Limitations to the program are: lack of permanent recurring funding; limited overlap between the school calendar and the period of good weather at Valentine Camp; the lack of an indoor facility for projects, the storage of collections, and teaching in inclement weather; and the lack of restroom facilities. The needs are recurring staff funding and a facility with a classroom and restrooms. We are planning to construct a Education Center at Valentine Camp. The facility

would be a log classroom building with a covered patio and accessible restrooms. It will be located just south of the University cabin parking area (see map, Appendix F). In October, 1998 Mammoth Mountain Ski Area (MMSA) and Intrawest Mammoth Corporation agreed to construct the project as a donation to the University. We plan to break ground in June, 1999 and complete the project that summer. We have started a private fundraising campaign to outfit the center and provide bridging funding for the program until such time as University funding is secured. Carol Valentine started the campaign with a donation of $25,000. Paul and Kate Page, volunteers at SNARL and Valcamp from Mammoth Lakes followed with a $10,000 donation. An additional $10,000 has been raised to date for a total of $45,000.

RESOURCE MANAGEMENT PROGRAM

1. Goals:
    a. Protect the landscape, natural habitats, and native plant and animal species at Valentine Camp to the greatest extent possible.
    b. Manage the forest habitats at Valentine Camp to maintain a healthy “natural” forest while minimizing fuel loads and guarding against major insect invasions.
    c. Guard against impacts from pending development projects including impacts such as exotic plant invasion, pet and human trespass, erosion, sedimentation, noise, night lighting, and viewshed deterioration.
    d. Guard against impacts to aquatic and riparian habitats from water diversions and extractions.
    e. Work with local agencies to promote sound management practices on both nearby and regional lands.

2. Implementation:
    a. Maintain close contact with the Mammoth Community Water District and State Water Resource Control Board to establish acceptable minimum flow levels in Mammoth Creek.
    b. Develop a forest management plan.
    c. Conduct annual timber thinning projects to halt insect irruptions in the forest and reduce fuel loads.
    d. Maintain and expand spring flow monitoring to evaluate impacts to the springs from local groundwater extraction.
    e. Maintain our relationship with Intrawest Corp., and ensure the completion of mitigation measures outlined in our agreement with them.
    f. Continue to work with the USFS to minimize mountain bike trespass from the Panorama Dome trail.
    g. Work with the USFS and private landowners to facilitate a land exchange of the so-called “Madden Property” from private to USFS ownership.
    h. Construct additional fencing, as needed, to control trespass.
    i. Maintain security patrols by the resident caretaker to help control pedestrian, pet, and bicycle trespass.
    j. Trap or otherwise capture pets and feral animals and remove from Valcamp.
    k. Construct additional boardwalks on trails over all wet and sensitive habitats.
    l. Design, print, and deploy new boundary demarcation/no trespassing signs.

3. Management Issues and Program Status: There is no active resource management program. Resource management problems are handled as they arise.

a. **Forest Management:** Forest management is the highest priority resource issue. Because of the suppression of wildfire at Valentine Camp since the mid-1800s, tree density has increased, fuel loads (both standing and down) are very high, and tree mortality due to insect invasion is high. Given the changes that have taken place since 1850, we need to define our management target and how to achieve it. In 1994 Scott Stephens, a graduate student in fire ecology at UCB, was hired to determine the historical fire frequency in the Reserve in efforts to understand the ecological role of fire in this system. Stephens' work (Appendix E) revealed mean fire intervals of 10.9 and 36.7 years for the Jeffrey pine and upper montane mixed conifer forest types, respectively before settlement of the area. Stephens also has conducted fuel load transects throughout the Reserve but was not available to develop a forest management plan. He is now a faculty member at Cal Poly, San Luis Obispo and may be available for such a project.

   Significant mortality is taking place in the lodgepole pine forest along the entrance road due to an infestation of the Mountain Pine Beetle, *Dendoctronous monticolae*. Consultation with the CA Dept. of Forestry and Fire Prevention suggested that most of the lodgepole pines would be killed if active measures were not taken to arrest the beetle outbreak. Although this may be considered a "natural" process, the excessive fuel load created by this outbreak would engender a tremendous fire hazard at the urban/wildland interface at Valentine Camp. We decided to seek an Emergency Timber Harvest Permit from CDF, then sell the live trees with active beetle infestations as well as 90% of the standing dead lodgepole, to a commercial fuelwood operator. A registered professional forester was hired to mark trees for the sale, delineate archeological and riparian zones, develop operating conditions to protect those zones, and file for the permit. The Emergency Timber Harvest Permit was issued but we were unable to locate any timber operator who could purchase and remove the trees without major impact to the Reserve. During the summer of 1998 we moved forward with the timber harvest ourselves using inmate labor from the Owens Valley Conservation Camp. During each working day of August and the first week of September we had 17 inmates (and some days 34) and their captain on-site. The crews dropped and bucked the trees and carried all of the timber and slash out of the forest by hand. Old fuel that had accumulated on the forest floor was also removed. The project was restricted to an approximately 5 acre site in the southeast corner of the reserve. We purchased a large commercial chipper for the project and all of the slash was chipped on-site and used for the internal roads and parking areas. The timber was sold locally as firewood, sold to a commercial firewood operator, and sold as saw logs to a local timber operator. Approximately $6,000 was generated by the sale. It is anticipated that we will use inmates for fuel management each summer, slowly working through the forested parts of the reserve.

b. **Trespass:** Trespass, by walkers, cyclists, and pets has the potential to severely affect natural resources on the Reserve. Attempts to limit trespass include: signage, fencing, patrol and contact, impoundment of pets, and personal contact with neighbors. In 1994, the Inyo National Forest opened the Panorama Dome trail to mountain bike use. This is a loop trail starting and ending near Twin Lakes to the west and located directly upslope from the Reserve. The opening of this trail resulted in a substantial increase in mountain bike trespass into the Reserve and considerable resource damage. Following considerable pressure from the Resident Director, the USFS extended an arm of the trail to Old Mammoth Road. During this period we installed numerous water bars and obstacles on Reserve trails.

The combination of these efforts has curtailed much of the trespass from that trail onto the Reserve. The pending development of a resort hotel and ski lodge immediately north and northeast of the Reserve has the potential to dramatically increase trespass. The Town of Mammoth Lakes also plans to extend a bike and pedestrian path to a point near our northeast corner. We have worked closely with the Town and resort developer, Intrawest Corp., to develop a plan to minimize the trespass from these developments. This plan includes the extension of the bike path to the north through the resort property; physical barriers to trespass such as berms, large boulders and downed trees; a road and path design within the resort that discourages the movement of pedestrians toward Valcamp; the construction of approximately 100' of welded steel fencing; and interpretive materials for patrons describing the potential impact of trespass on the Reserve.

c. **Water Issues:** Mammoth Creek leaves Twin Lakes and flows through the Reserve from west to east. The Mammoth Community Water District (MCWD) has the right to divert water for domestic purposes at a point upstream of Twin Lakes. Since 1976, the University has negotiated with MCWD, the USFS, the CA Dept. of Fish and Game, and the State Water Resources Control Board to establish diversion amounts and the minimum flows needed for Mammoth Creek. Although most of the focus has been on the minimum flows required to keep the trout population in good condition we have tried to broaden the scope of the analysis to include riparian vegetation and invertebrates. MCWD currently has a petition before the State Board requesting a change in the minimum flow requirements and a change in the point of flow measurement. Because Mammoth Creek gains and loses surface water in different reaches a change in the measuring point will result in a different set of minimum flow requirements. That hearing likely will take place in 1999 and the University will be a participant. In 1992, during a period of low stream flow and restrictions on landscape watering in Mammoth Lakes, MCWD declared an emergency under CEQA and drilled five water wells on private land around Mammoth. In the subsequent CEQA document, they chose to ignore issues the University raised about potential impacts to springs on the Reserve. Subsequently, the UC Office of the General Counsel filed suit in Mono Superior Court alleging failure of MCWD to comply with CEQA. The action was settled out of court and we participate with MCWD on a monitoring plan and annual report. Should impacts of groundwater pumping on spring flow be detected, further negotiations will be required. Recently the Resident Director worked closely with MCWD, MMSA, and Intrawest for approval of a reclaimed water project by MCWD that will reduce reliance on groundwater resources by providing reclaimed water to Intrawest's golf course.

d. **Madden Property**: In the mid-1960's Edward Valentine sold off a 3.78 acre corner of the property that was truncated by Lake Mary Road to Mr. Joe Madden. The parcel is triangular in shape with National Forest on two sides and the Reserve on the third, downhill, side. Over the years Mr. Madden came before Mono County and later the Town of Mammoth Lakes with various development proposals for the property. The University opposed many of these proposals because of environmental impacts that would have resulted from the projects to the Reserve. The impacts include increased erosion due to increased runoff from the subject parcel by creation of impervious surfaces during development, visual impacts, and increased trespass. The county and town failed to approve any of the projects because of concerns over access and visual impacts. In 1997 Mr. Madden passed away and the parcel was sold to local developers before the National Forest was able to acquire it. Although the new owners claimed they were buying the property to use in a land exchange with the National Forest, they have since changed their minds because of the length of time

an exchange requires. They are now proposing to develop the parcel into four custom home sites.

e. **Wilson Property:** In 1968 Ed Valentine deeded 5.2 acres of Valentine Camp to Stuart O'Melvany as a buyout of O'Melvany's interest in the camp. The property has street frontage on Old Mammoth Rd. and is surrounded by the Reserve on 3 sides. (Appendix F).O'Melvany constructed one house and later transferred the property to a trust set up for his grandchildren, the Wilson Family Trust. Although the property was surveyed, no demarcation was established between it and Valcamp. The Valentines and later the University have enjoyed the use of the property. The reserve boundary fence cuts across the Wilson property close to the road and the forest trail, one of two loop trails in the reserve, also cuts across the property. In 1998 Stuart Wilson, grandson of Stuart O'Melvany and trustee of the Wilson Family Trust approached the Resident Director about their plans to subdivide the property. They proposed to create a 1.5 acre parcel around their house, create 3 new 0.50 acre street frontage lots and a 2.3 acre remainder parcel with the northern part of the lot. In return for the University's agreement, consistent with University policies and applicable laws, not to object to the parcel map Wilson proposed to donate the remainder parcel to the University. The lot split and subsequent donation to the University, valued at $500,000 were recorded on December 30, 1998. The Reserve's forest trail, a private trail for internal Reserve use only, crosses the 4 lots. An easement for University use of the trail has been negotiated. We are in the process of negotiating a limited use agreement for the Wilson family to come on the Reserve. The easement and the agreement should be concluded by summer, 1999.

f. Hantavirus: In summer, 1992 a graduate student living at Valentine Camp died suddenly from acute pulmonary distress due to a Hantavirus infection. At the time, this case was the first known Hantavirus infection in the US outside of the 4 Corners area of Arizona, New Mexico, Colorado, and Utah, where this particular strain of virus was first identified. Since then there have been several documented cases throughout Inyo and Mono counties.Hantavirus can infect people who come in contact with the blood, droppings, urine, or saliva of the deer mouse, *Peromyscus maniculatu*s. The young woman above was working with robin nestlings at Valentine Camp, SNARL, and along Mammoth Creek below US 395. There was intensive investigation of this case by personnel from the Centers for Disease Control, the CA Dept. of Health, the US Army Medical Research Institute for Infectious Disease (USAMRIID), and UC health and safety offices. Living conditions at Valentine Camp were questioned in early news reports but trapping by the various agencies produced no seropositive animals at Valentine Camp and no mice, at all, in the student's cabin. Seropositive animals were trapped at SNARL and near her research site on Mammoth Creek. As a result of this incident, the University improved the houses at VESR to make them as rodent proof as possible. This work has been completed. An on-going prevention program is in place, which includes rodent proofing as necessary, trapping, safety precautions for staff, and educational information for users.

FACILITIES DEVELOPMENT PROGRAM

1. Goals:
   a. Improve existing facilities to reduce maintenance needs, meet user needs, and reduce all safety hazards.

b. Develop new facilities to meet specific needs.
c. Acquire existing off-site facilities if they become available and meet our needs.

2. Implementation:
   a. Maintain existing facilities in clean, serviceable and safe condition. A facilities inventory is attached as Appendix G.
   b. Continue replacement of logs in cabins as needed.
   c. Improve electrical cabling and facilities to allow an upgrade to interior electrical service.
   d. Upgrade interior electrical service in each cabin, as needed, to accommodate research equipment and computers.
   e. Remodel the lofts in the University Cabin to provide for additional beds and limited office space.
   f. Construct an Education Center to support the Community Education Program and provide accessible restrooms for all day users of the Reserve.
   g. Construct boardwalks on existing trails in all sensitive areas.
   h. Improve the waterfall trail and extend it to the forest trail (Appendix F).
   i. Install an electrical gate at the entrance with some type of combination or key card features for security.
   j. Establish VESR interest in the acquisition of Whitmore housing facilities if they become available (see discussion in section 3 below).
   k. Minimize waste production and recycle materials whenever possible.

2. Program Status: Housing is provided by three cabins that have a total of 17 beds. The cabins are over 70 years old and have been remodeled several times. Because of their age, design, and the severe climate, considerable maintenance is required to keep the cabins in good condition. Each building has its own cooking and restroom facilities, and users prepare their own meals. Existing facilities are in reasonable condition but, with only one maintenance worker, it is difficult to maintain and improve buildings, as well as conduct new construction. The cabins do not have enough electrical outlets and experience voltage drawdowns due to inadequate cabling. The electrical system needs to be upgraded. No outdoor trash receptacles are provided on the Reserve because they attract bears. Users are expected to take their own trash to a nearby Town transfer, daily. Although the Town has a central recycling facility we offer no recycling opportunities at Valentine Camp. A bear-resistant recycling depot at the Reserve, to accommodate bottles, cans and cardboard, would be desirable.

3. Limitations, Needs, Justification:. Although all facilities are in good condition, improvements and maintenance are needed. The number of beds at Valentine Camp could be increased to 25 if the lofts in the University Cabin were remodeled. The loft project in the University Cabin would allow small classes to stay at the Reserve when no researchers were in residence. This project would also create limited office space in the University Cabin so that the living room could be used exclusively for dining and sitting. This project can be completed in 2000 or 2001 with existing funds that were provided by the Systemwide NRS office for cabin upgrades. Improvements in the underground electrical service may be needed to support the expansion of electrical service in the cabins for equipment and computers.

In 1996, raised boardwalks were constructed along parts of the trail in the meadow and near the north springs. With increased use by school groups and other programs for the public, the goals of this project were to make the trails safer, keep people on the trails, and minimize natural resource impacts. The trial boardwalk areas have been successful, and we have located additional trail segments that need boardwalks. Construction of boardwalks is both expensive

and time consuming. We are considering the use of volunteer work crews to continue the project. As part of the project we would like to place boardwalks on most of the waterfall trail and construct switchbacks from the current terminus at the waterfall to the forest trail (Appendix F).

The Outdoor Science Education Program at Valentine Camp has used very few facilities. A staging and lecture area has been constructed for this program near the entrance gate. During summer school the existing restrooms are used but they are located within cabins which are frequently occupied by researchers. This creates an uncomfortable situation because young students pass through the quarters of users. In 1997 and 1998 we used portable toilets but the rental of portable toilets is expensive and does not present a long-term solution. Furthermore, the Education Program has no indoor workspace which could be used for collections, and extended projects, and during inclement weather. In response to these needs, we have developed plans for an education center with restroom facilities for all day-use groups. The project will be constructed in the summer, 1999 by Mammoth Mountain Ski Area and Intrawest Mammoth Corporation.

The City of Los Angeles, Department of Recreation and Parks has 4 residences adjacent to the Whitmore Swimming Pool and approximately one mile from SNARL. The City uses the site as a support facility for the operation of Camp High Sierra in Mammoth. The land is owned by the Los Angeles Department of Water and Power (LADWP). Scott Roripaugh, VESR Maintenance Supervisor, lives in one of these houses. The water supply for these houses comes from a spring a mile away and is pumped by a water wheel on Convict Creek. There is pressure from the California Department of Fish and Game and the LADWP for Recreation and Parks to abandon their current water supply system and develop a new one. There is a chance, with this increased cost, that Recreation and Parks will decide to abandon these houses. This site would make ideal overflow and family housing for VESR visitors. The houses are habitable all 4 seasons and immediately adjacent to a plowed county road. We have a letter on file with LADWP indicating our interest in acquiring the site as a satellite VESR facility and making the required water system upgrades.

All maintenance is supported by the existing operations budget. No Operation and Maintenance of Plant (OMP) funds are currently available from the State. Although facilities have been slowly improving, progress is limited by both funding and staff time.

4. Maximum Population: The maximum occupancy of Valentine Camp housing is 17 people. We propose to carry out improvements that will provide accommodation for 25 via additional work on the University Cabin. During summer school an additional 22 students and staff may be at the Reserve during the day. School field trips may include up to 35 day users. This number is probably the maximum number of users the Reserve can sustain without damaging resources or creating conflicts between various user groups.

EQUIPMENT ACQUISITION PROGRAM

1. Goals:
   a. Acquire and maintain the equipment needed to maintain the Reserve and facilities.
   b. Acquire laboratory and office equipment needed to support research and teaching. Generally this is equipment too large or costly for individual projects to provide.
   c. Acquire and maintain equipment for monitoring spring flow, meteorological parameters, and stream flow.

2. Implementation:
   a. Acquire and install additional environmental monitoring equipment.
   b. Acquire at least one more reliable vehicle.
   c. Upon construction of the education center, acquire microscopes, binoculars, books, collection cabinets, and lab equipment needed to support the Community Education Program.

3. Program Status: There is a substantial amount of maintenance equipment shared between SNARL and Valentine Camp. Generally the equipment is stored at SNARL except when being used at Valentine Camp. This equipment includes a loader and backhoe combination, dumptruck, other vehicles, logsplitter, chipper/grinder, welders, chainsaws, and power and pneumatic tools. Replacement costs for these items would exceed $300K.

Current environmental monitoring consists of an insertion flow meter and data logger at the north spring complex and a fiberglass flume with pressure transducer and datalogger at the middle spring complex. This flume is placed just downstream of the meadow trail before the spring flow enters Mammoth Creek (Appendix F).

4. Limitations, Needs and Justification: There is considerable loss of efficiency if significant time is spent moving tools and vehicles back and forth between the two Reserves. As a consequence, we have been acquiring duplicate items as needed at Valcamp through outright purchase or through federal surplus. At the present time we have 4 vehicles: a 1981 International dumptruck, a 1982 Subaru station wagon, a 1977 Dodge 4 wheel drive pickup, and a 1987 Dodge Ram pickup. The 1977 pickup is in poor condition and will require replacement. The reserve also owns a diesel blazer that has been assigned permanently to the Mono Lake research group.

We propose to expand environmental monitoring to include flow from the south springs, flow in Mammoth Creek, and some limited meteorological monitoring including air temperature relative humidity, wind speed and direction, precipitation, and snow depth. A location for this installation has not been determined. Equipment items are needed for all of these installations.

ADMINISTRATION AND STAFFING

1. Goals:
   a. Provide responsible leadership in maintaining and supporting Valentine Camp as an outstanding field station.
   b. Maintain flexibility to respond to changing maintenance loads and user needs.
   c. Provide staff support to visiting researchers and classes.
   d. Manage the station within budget.
   e. Provide staff to maintain, manage, and protect natural habitats.
   f. Promote increased use of the station.

2. Implementation:
   a. Procure recurring funding for 5 staff positions including: a seasonal maintenance worker (Cabot Thomas), Education Coordinator (Leslie Dawson), Education Assistant (Sherry Taylor), Database Manager (Robert Jellison), and Environmental Monitoring Specialist (Peter Kirchner).
   b. Develop a Forest Management Plan as an attachment to this plan.
   c. Create WWW and email versions of all informational documents and applications.

d. Identify deferred maintenance priorities and establish a schedule.
e. Update the SNARL Management Plan and identify links with this plan.

3. Program Status: An organization chart is attached as Appendix H. A detailed forest management plan will require some time to complete. We have substantial information on fire history but we need to establish plans for management of standing and dead fuel, insect infestations, and timber harvest.

There is a plan to unify the NRS application forms and place them all on the NRS website at UCOP. We have email versions of each of the user application forms. We have an email version of the VESR Information Packet and map. Development and use of these email and web-based documents should be made high priority.

Deferred maintenance priorities are generally established on an annual basis in advance of the UCSB NRS meetings. However it would be desirable to have a master list with proposed scheduling.

4. Limitations, Needs, Justification: Permanent funding is needed to maintain staffing at existing levels. Using non-recurring funds we can maintain the Database Manager and Environmental Monitoring Specialist through 1999. It may be possible to fund the seasonal maintenance worker position from recharge income, however this source of support will reduce funds for deferred maintenance. The Education Coordinator is funded from grant money until the end of FY 98/99. It may be possible to procure additional grant funds for that position.

5. Special Topics:

a. **Application Procedure:** Permission to use the facilities or have access to the natural resources at Valentine Camp is secured by filling out a detailed application form and submitting it to the Resident Director (Appendix I). Three types of applications have been standardized for all UCSB Reserves: Research, Class Use, and Field Trip. In addition, VESR has a special 1-page School Field Trip Application for K-12 classes. All use applications must be approved by the Resident Director. The Resident Director confers with the Faculty Manager or Campus Director if the proposed use demands extraordinary space, requires manipulations, is of questionable scientific merit, or has other special considerations (such as the introduction of exotic organisms). The Faculty Manager may choose to consult with other faculty on special topics. A notification of the approved application is sent to the user and users are asked to coordinate the details of their arrival with the Resident Director. In signing the application form, the users agree to submit a report of their findings as well as a copy of publications resulting from reserve-based research to the UCSB NRS Office. Despite this agreement, we often have trouble obtaining copies of papers and theses.

We have not developed policy regarding permissible research activities on the Reserve. Observations, tagging and tissue removal from organisms is generally allowed. A plan should be developed to coordinate the tagging of plants and prevent flagging from becoming widely distributed. We need provisions for the removal of flags and markers upon project completion. Removal of organisms and the use of fire, herbicides and pesticides will be handled on a case-by-case basis. Introduction of exotic species generally is not allowed.

b. **Fee Schedule:** Valentine Camp charges modest fees for housing. The charges have UC and Non-UC rates. All rates have been approved by the UCSB Rate and Recharge Committee (Appendix J). Fees are paid either by personal check, recharge or BARC account. The Resident Director and staff keep records of use and process a Statement of Charges and Use at the end of each calendar month. This statement is sent to the UCSB NRS Administrative Assistant who then processes each bill. The considerable effort involved in processing the bills is justified because of the significant revenue generated each fiscal year.

c. **Hazardous Waste:** Laboratory activities at SNARL generate a considerable volume of chemical and radioactive waste. Policies and procedures are in place for the storage and disposal of this waste. If lab use at Valcamp generates any waste, the waste will be transported to SNARL and integrated into SNARL's waste disposal system. Charges will be assessed to cover disposal costs.

e. **Animal Care:** At the January 1993, Systemwide Meeting of UC Vets and Animal Care Administrators, the subject of NRS sites was discussed. It was concluded that the administering campus of each NRS site has permitting responsibility for animal care and handling at that site. For UCSB users of Valcamp handling wild vertebrates this decision required no changes, however, for non-UCSB users an Animal Care Protocol must now be obtained from both the parent campus and UCSB. During the summer, 1998, a woodshed was converted to hold birds at Valcamp. Animal facilities, both terrestrial and aquatic, have been established at SNARL. These would be available to Valcamp users subject to UCSB Animal Care Committee approval.

f. **Emergencies and Safety:** An Emergency Action and Fire Prevention Plan (EAFPP) for Valentine Camp was submitted and approved by UCSB's Office of Environmental Health and Safety in January, 1990 (Appendix K). A copy of this plan is prominently posted in each residential building at Valcamp. Emergency services are provided by the Mammoth Lakes Volunteer Fire Department, the Mammoth Lakes Police Department and the Mono County Paramedics. 9-1-1 service to Valcamp has been established. In advance of an emergency, we should coordinate with these agencies to prevent resource damage due to agency responses and to inform them of potential hazards and limitations such as the latched gate, narrow road, chemicals in the lab, and storage of flammable materials. Valcamp has an emergency fire suppression system consisting of a cistern at a large spring in the middle spring complex, three 2” hydrants in camp, and fire hose reels with hoses and nozzles at each hydrant. We have sufficient hydrant flow for two hoses for 20 minutes. There is a fire station located on Old Mammoth Road approximately ½ mile from the Reserve. Response times to fire from the Fire Department within Mammoth are quite good. The Department estimates its initial response time to a fire at Valentine Camp would be 5-6 minutes following a 911 phone call.

California Senate Bill 198 requires every employer to have a written Injury and Illness Prevention Program. Each department at UCSB is required to have its own program. Compliance with this requirement can be accomplished by using the UCSB Master Program document and tailoring this document for Valentine Camp. The program requires the identification of work place hazards, procedures for correcting hazards, safety and health training for all employees, and detailed record keeping. All UC employees at Valcamp need to be trained in general and laboratory safety. All

non-UC users of the station are informed of local hazards in the Release Agreement they are required to sign. Illness and Injury Prevention training for non-UC users is the responsibility of their employers.

The Resident Director has been designated as the Hazard Communication Coordinator for VESR. It is his responsibility to identify all hazardous materials, train employees exposed to hazardous material, maintain Material Safety Data Sheets, ensure all materials are properly labeled, minimize the inventory of hazardous materials, and coordinate hazardous material disposal.

A safety problem that has not been adequately addressed is the extent of VESR's responsibility for users of the station using the backcountry, particularly during winter. At present, there are no standard procedures for training users in backcountry use, or notifying managers when users are in the backcountry. We have no radio system nor formal procedure for deciding when to alert Search and Rescue of missing persons or backcountry injuries. Users of SNARL snowmobiles will be required to have snowmobile training but standardized procedures must be developed to cover such issues as route finding and avalanche safety. UCSB Office of Environmental Health and Safety is in the process of developing a field researcher safety manual. We have suggested a section be included on winter safety. There is no estimated completion date for this document.

FUNDRAISING:

1. Purpose: To secure funding, both recurring and non-recurring, from both intramural and extramural sources, to support the initiatives detailed in this plan.

2. Goals:
   a. To acquire additional University of California financial resources for operations, capital projects and new programs at Valentine Camp.
   b. To identify and target new funding sources for existing programs and additional development.

3. Implementation:
   a. Continue dialogue with the UCSB Office of Development and inform them about Valentine Camp needs, issues, and accomplishments.
   b. Work closely with the development officer at NRS Systemwide to develop new fundraising strategies and find new sources of funding.
   c. Consider a NSF planning grant for work on a Forest Management Plan.
   d. Continue private fundraising for the Community Education Program.
   e. Explore DANR funding for projects at Valentine Camp, particularly those related to urban/wildland interface issues.
   f. Maintain a dialogue with the Mammoth Mountain Ski Area and Intrawest Corporation regarding the potential funding of Valcamp projects.

4. Program Status: Present staffing levels enable VESR to function as a full-service field research station. These staff positions serve both Reserve sites. Maintenance of this level of service will require procuring recurring funding sources for staff support. Funding at Valentine Camp has been limited to endowment income, some limited recharge income, a few small donations, and the fees charged for summer school. Valentine Camp has great appeal for fund

raising efforts but limited support from the UCSB Office of Development. Janice Gross, UCSB Director of Development for Science and Foundations, is supportive of our fundraising efforts but promises to provide only a supporting role. Although Systemwide fundraising initiatives appear promising, Valentine Camp will probably be a low priority because it is supported by the Valentine endowment.

During the summer, 1998 we conducted two small private fundraising events at Valentine that generated $5K in donations. We plan to continue these types of events and refine our appeal for funds and increase the success of these events.

5. Limitations, Needs, Justifications: The limitations of this program are inadequate staff time for fundraising, the lack of support from the UCSB Office of Development, and the lack of support (to date) from the NRS Systemwide office. What we need is a part-time person, with experience, that could fill a fundraising role. At the present time I am trying to find volunteers from the community who are interested in helping the reserve raise funds. Because there are many wealthy second home owners in Mammoth with private funds or access to corporate money, Valcamp may be a good target for donations. The Mammoth Lakes College Foundation has had excellent success at raising funds from Mammoth donors.

REGIONAL INTEGRATION

1. Regional Land Use: Valentine Camp is located in Mono County, California. Mono is a rather large county with a population of approximately 10,000 people. The only incorporated area in the county is the Town of Mammoth. The Reserve is within the town boundaries. Approximately 90% of the land in Mono County is owned by the federal government (BLM, USFS) or LADWP. Valentine Camp is located within 2 miles of the John Muir Wilderness and 30 miles south of Mono Lake.

The land immediately to the east and south of the Reserve is occupied by single family homes. The land to the north and northeast is single family residential and resort use. The land to the northwest, west, and southwest of Valcamp is owned by the US Forest Service and is managed for multiple use although recreation, including skiing to the northwest, is the dominant use.

The land to the northeast is owned by the Intrawest Corporation which is constructing a condominium hotel project on the site. This will be followed in 1999 by additional condominium units and a new ski lodge facility.

2. Interagency Coordination: The VESR Director attends monthly meetings of the Owens Valley Interagency Committee (OVIAC), where agencies share information on current programs and projects of mutual interest. Officials from the following agencies typically attend:

Los Angeles Department of Water and Power (LADWP)
Inyo National Forest: Supervisor's Office and various Ranger Districts
California Department of Fish and Game
Bureau of Land Management: Bishop Office
California Department of Forestry
California Department of Corrections
Inyo County
Mono County
National Park Service

University of California White Mountain Research Station
CALTRANS

We routinely interact with the following agencies :

LADWP: The land at SNARL is leased from LADWP by the Regents and LADWP owns much of the land in Long Valley where SNARL is located. VESR researchers must get LADWP permission to conduct research or teach on their land. We are closely linked to them in several research areas including Mono Lake research, stream research, and potential research on Crowley Lake. Key contacts are Glenn Singley, Northern District Engineer and Brian Tillemans, Biologist.

Inyo National Forest: Both reserves border National Forest land and much of the research conducted from the reserves takes place, in part, on National Forest land. We interact with the USFS on land management issues and research permits. We have also formed a partnership with the USFS and received grants together to support our Outdoor Science Education Program. In addition, the Director has participated on several Forest Service committees including the Mono Basin Scenic Area Advisory Committee, a planning team for 1 million acres of Sierra wilderness (PIT) and a management planning team for the Hall Research Natural Area. Key contacts are Bill Bramlette, Deputy Forest Supervisor, Sandi Hogan, Assistant Forest Supervisor, and JoBeth Brown, Public Information Specialist.

CA Department of Fish and Game (DFG): There are many research projects at VESR that involve fish and wildlife. Permits are required from, and close coordination is desirable with, DFG to conduct this work. DFG staff members are very interested in native fish and aquatic invertebrates. On occasion they have provided funding for research. The local game wardens are our law enforcement contacts for poaching infractions. We maintain permits with DFG for our vertebrate collections. Key contacts are Alan Pickard, Supervisory Fisheries Biologist, Darryl Wong, Fisheries Biologist, Curtis Milliron, Fisheries Biologist, and Vern Bleich, Supervisory Wildlife Biologist.

Bureau of Land Management (BLM): BLM has extensive public land holdings in Inyo and Mono Counties. We interact with BLM on land management issues and for research permits on their land. Key contacts are Terri Russi, Wildlife Biologist and Anne Halford, Botanist.

CA Department of Forestry and Fire Protection (CDF): We interact with CDF on two levels. At the local level, they maintain, with the California Department of Corrections, a prison and work camp near Bishop. Inmate work crews are available to us at no cost. On the regional level, CDF is the regulatory and advisory agency for timber harvest and management at Valcamp. The key contact at the regional level is Doug Forest. The local contact for arranging work crews is Carl Staddick.

Mono County: Both reserves are located in Mono County. We interact with Mono County on many land management and land use issues. Recently we have formed a partnership with Mono County's planning department to help incorporate results from the Sierra Nevada Ecosystem Project (SNEP) into county documents and databases. Key contacts are Scott Burns, Planning Director and Paul Rowan, Supervisor.

White Mountain Research Station (WMRS): WMRS is a University of California multi-campus research unit (MRU), currently administered through UC San Diego. The headquarters for WMRS is in Bishop and they maintain research stations at Crooked Creek (10,400' asl) and Barcroft (12,600' asl). We co-hosted the 1996 meeting of the Organization of Biological Field Stations, SNARL staff teach a portion of their "Supercourse", and we have shared equipment and on occasion, staff. Under their new director, Dr. Frank Powell, WMRS has sought to expand their range of activities and influence into areas that affect VESR. Although personal relations remain cordial we need to identify appropriate boundaries and positive methods of interaction. Key contacts are Frank Powell, Director and Dave Trydahl, Superintendent.

3. Community Relations: Community relations are generally quite good. Although there are some belligerent trespassers and a few people grumble about University restrictions on public access to land, sentiment toward the Reserve is favorable. Since 1976, the University has hosted an annual benefit open house at Valcamp. The University provided the site and faculty, staff, students, and friends as guides to Valcamp and the biota. The Mammoth Lakes Hospital Auxiliary sold 225 tickets and provided refreshments at this event which was one of their annual fundraisers. We have recently cancelled this event in favor of conducting several smaller public access events which focus more directly on the Reserve's needs.

The Outdoor Science Education Program has created tremendous public support for the Reserve. Parents in the community now see the Reserve as an asset to their child's education and have become stakeholders. There is tremendous popular support for the program and, hence, increased support for the Reserve. Tours also are conducted at little or no charge for non-profit groups such as Scouts, the Audubon Society, the Sierra Club and the California Native Plant Society. The SNARL Summer Lecture Series provides a forum for disseminating the results of scientific research conducted at VESR and provides positive interactions between investigators and the public

BUDGET SUMMARY AND RANKED PRIORITIES FOR VALENTINE CAMP:

1. 1996-1997 Expenditures:

Resident Director's salary	$ 55,979
Resident Caretaker's salary	10,460
Seasonal Maint. Worker's salary (1/2 for Valcamp)	5,975
Education Coordinator's salary (now on grant funds)	7,402
Benefits	15,055
Maintenance and operation	3,757
Vehicle maintenance and fuel	1,007
Telephone	1,502
Utilities (estimate)	10,000
TOTAL	**$111,137**

2. 1996-1997 Funding Sources:

Valentine Endowment	$ 89,718
Systemwide Funds (54354)	6,393
Recharge/Income	5,116

Campus Facilities Management, utilities (estimate)	10,000
TOTAL	**$111,137**

Notes: Although the Resident Director's salary is derived from the Valentine Endowment his management extends to both Reserves. The total 96-97 expenditures for Valcamp and SNARL combined were $250,563 which include a one-time expenditure of $46,821 on a capital project. This makes the 96-97 operational expenses $203,742.

3. <u>Valentine Camp Ranked Needs:</u>

Recurring (most of these positions are shared with SNARL and cannot be separated)

a.	Part-time steward position (Cabot Thomas), 6 mos. full-time,	$15,000/yr
b.	Outdoor Education Program, 0.5 FTE	$17,000/yr
c.	Environmental Monitoring Specialist, permanent funding	$15,000/yr
d.	Database Manager, permanent funding	$15,000/yr
TOTAL		**$62,000/yr**

Non-recurring (One-time)

a.	Trail/boardwalk construction	$15,000
b.	Development of Forest Management Plan	$10,000
c.	Prescribed burn and mechanical fuel reduction	$10,000
d.	Resource Inventories, aerial photos, photomonitoring	$30,000
e.	Furniture and appliances	$10,000
f.	Replace underground electrical service	$15,000
TOTAL		**$90,000**

APPENDICES

A. Use Analysis
B. Valentine Camp Brochure
C. Species Lists
D. Outdoor Science Education Program
E. Fire History
F. Site Map
G. Facilities Inventory
H. UCSB NRS Organizational Chart
I. Application Forms
J. VESR Fee Schedule
K. Emergency Action, Fire Prevention Plan
L. Valcamp Bibliography
M. Project Timeline