



Sagehen Creek Field Station Annual Report , FY06-07

Sagehen Creek Field Station
P.O. Box 939/11616 Sagehen Road
Truckee, CA 96169
sagehen@berkeley.edu
<http://sagehen.berkeley.edu/>
Report prepared June 3, 2008 by Jeff Brown and Faerthen Felix.
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Highlights:

MANAGEMENT...

- Rapid growth in visitation and use continues. FY-0607 is the sixth consecutive record-breaking year for Sagehen.
- The USDA Forest Service and University of California, Berkeley announced the designation of the Sagehen Experimental Forest under the administration of the USDA Forest Service's Pacific Southwest Research Station (PSW) and the Tahoe National Forest.

The designation of the Sagehen Experimental Forest creates California's 11th experimental forest, and is the first to be created since 1962.

You can watch the Dedication Ceremony on our V-log at:

http://sagehen-video.blogspot.com/2006/08/sagehen-experimental-forest-dedication_10.html

- We worked with the Forest Service PSW to develop the Research Plan for the new Sagehen Experimental Forest.

This is a document outlining the purpose & mission of the Sagehen Experimental Forest & guiding principles for research in the Sagehen basin, including primary research themes, featured research opportunities & public engagement.

<http://sagehen.ucnrs.org/planning-group.htm>

- On September 26, 2006, a consortium of land owners & managers including: the North Fork Association, Chickering Partnership, USDA Forest Service Tahoe National Forest, US Forest Service Pacific Southwest Research Station & Regents of the University of California signed a Conservation and Research Agreement (with introductory letter) addressing future cooperative management of the approximately 19,670 acres of public & private lands in this watershed.

This agreement creates a common management vision for the headwaters of a unique watershed that contains many remarkable features, including a population of mountain yellow-legged frogs, diverse botany & the largest stand of California old growth forest outside of the National Park system.

<http://sagehen.blogspot.com/2006/09/on-september-26-2006-consortium-of-land.html>

- We continued our extensive community networking with significant involvement with local groups like the Truckee River Watershed Council [TRWC], Truckee-Tahoe Regional Education Coalition [TTREC] & the Truckee River Implementation Team [TRIT] that is working to re-establish the Lahontan Cutthroat Trout in the wild.

In addition, September saw Jeff & I attending the annual Organization of Biological Field Stations [OBFS] meeting, held this year at Flathead Lake, Montana. This is a great opportunity for us to talk to other folks who are dealing with the same challenges we are. We learned about some really clever approaches to problems & were able to take part in the legendary OBFS fund-raising auction [how much did I spend on this crap?].

October held the annual UC Natural Reserve System [UCNRS] managers & stewards meeting at Zzyzx Springs in the Mojave Desert--a fantastic setting for another really

beneficial get together. Since we're all in the same boat, it helps to share challenges & solutions, while figuring out ways to work together toward common goals. The annual costume party was spectacular as usual, with the theme of "Evolutionary Dead-Ends" providing rich fodder for the science lunatics.

In November, Jeff flew out to Ashland, NC for the national Experimental Forest meeting that occurs only once every 5 years. As a non-Forest Service manager, Jeff offers a unique perspective on Experimental Forest management that is proving beneficial to other forest managers.

One of the themes that came up in several of the earlier meetings is the National Ecological Observatory Network [NEON], a major National Science Foundation initiative to invest in research infrastructure that can take field biology to the next level. Two meetings in Berkeley in November & December focused on the California segment of this proposal: CalEON. We also worked to coordinate the UC Berkeley field stations as a state-scale data transect, and strategized how these assets might best integrate with the larger NEON network.

- This fall, Jeff & I received the Berkeley "Chancellor's Outstanding Staff Team Award" for our work here at Sagehen.
<http://sagehen.blogspot.com/2007/03/almost-forgot.html>
- Jeff spent a few days in Washington, D.C. talking to representatives & staffers about science with a delegation from OBFS.

RESEARCH...

- Cal Fish & Game begins a long-term project monitoring black bears in the Sagehen basin. In July, they capture & GPS-collar the first sow.
<http://sagehen-video.blogspot.com/2006/07/bear-research-revs-up-in-sagehen.html>
- Over Labor Day weekend last year, a contractor flew over the Sagehen basin collecting laser data for highly detailed 3-D mapping needed by the SPLAT researchers in the short term, but incredibly useful to other projects as well. This technology--called LiDAR--allows for amazingly detailed maps of not only the treetops, but also intermediate vegetation heights & bare ground. We were very excited at the prospect of such remarkable detail that could reveal geographic features invisible both from the ground & to conventional aerial imaging. A big thanks to the Berkeley Center for Forestry for providing this excellent resource.

Unfortunately, when the data came in it looked really bad. Apparently most LiDAR customers don't need scientific precision, so the processing can be really marginal yet still produce a useful product. For science, however, that doesn't wash & we were really worried that we might have blown our opportunity.

We recently shipped the raw data off to the experts at Berkeley's National Center for Aerial Laser Mapping (NCALM) & they reprocessed it to discover that we did indeed get good data that supports 1-meter resolution! You can take a look at some knock-off samples on our website.

<http://sagehen.ucnrs.org/gis.htm>

- A large research initiative in the area began this spring that is looking at animal-vehicle interaction on the Hwy-89 corridor. This area contains both the highest incident of animal-

vehicle collisions in the state, & a valuable CalTrans road-kill database going back to the 1960's.

LONG-TERM ENVIRONMENTAL MONITORING...

- Sagehen continues to serve as an active monitoring site within the National Atmospheric Deposition Program (NADP).
- Sagehen Creek continues in the USGS National Benchmark Stream Program. Stream water chemistry, temperature & volume information are routinely collected with the results databased in an online system.
- The Sagehen main weather station continues to collect weather data archived by the Western Region Climate Center in Reno, Nevada. Data available online.
- Two transects continue to be sampled for birds (June through July) within the Point Reyes Bird Observatory (PRBO) MAPS program--an effort as a result of a partnership between Sagehen, The Nature Conservancy and the USDA Forest Service - Partners in Flight Program.

EDUCATION...

- Sagehen continues to offer science-based workshops to the general public and agency personnel, including "Stream Ecology for Flyfishermen" and Cal Fish & Game's new "Black Bear Workshop".
- The Pacific Forest and Watershed Lands Stewardship Council awarded \$65,000 to the Adventure, Risk, & Challenge Program (ARC), an intensive literacy and leadership program for English Language Learners (ELL), at U.C. Berkeley's Sagehen Creek Field Station. The funds will be used to expand ARC to UC Santa Barbara's Sedgwick Reserve where it will serve ELL students in northern Santa Barbara, Kern, and San Luis Obispo Counties.

For more information on the Adventure, Risk, & Challenge Program go to <http://sagehen.ucnrs.org/arc/> or contact Katie Zanto at (530) 587-4830.

- Lake Tahoe school kids spent 3 days at Sagehen learning about mapping, data collection, animals & other basin ecology. Truckee teachers met with the Lake Tahoe instructors to talk about the program & it now appears that some local school kid programs that have been traveling to the coasts will be shifting visits to Sagehen as well.
- The popular Sagehen Summer Science Speaker Series ran again this summer from June through August. Information is available by Googling "Sagehen events".
- We continue to expand our K-12 programs here at Sagehen to support science education in the community. This season, we hosted 96 junior high & high school students from Loyalton & Downieville. This was our first opportunity to work with kids from Sierra County schools. Part of the Sagehen basin lies in Sierra County.

The program was put together as the education component of a large research initiative in the area that is looking at animal-vehicle interaction on the Hwy-89 corridor. The students rotated through stations focusing on topics related to this research & related

mitigation efforts: habitat assessment, motion sensing cameras, GPS & telemetry technology, weather & stream data collection, animal tracking, macroinvertebrates & vernal pools, museum collections.

- K-12 teachers met at Sagehen for a couple days, learning about Place-Based Service Learning.
- The UC Berkeley, Lawrence Hall of Science continues to conduct science summer camp at Sagehen.

FACILITIES...

- The Forest Service & Berkeley chipped in to help us repair this winter's flood damage to our roads. The heavy equipment repaired our plugged culverts & ditches, rerouted run-off & re-contoured the road surface.
- We finished tearing out & replacing all the windows & doors in the Botany Lab/Classroom. We got rid of the haphazard old shelving, installed rescued UC Davis casework in both rooms & installed a real floor drain to replace the ankle-breaker pit in the classroom. Then researcher Dave Westmoreland--edded out while waiting for his birds to nest--helped us paint the building. Now he's moved on to painting his own quarters: the Meadow Cabin (handy guy to have around!).

We also gutted the Upper Camp bathhouse, renovated & winterized it.



- "The Forest Service partnered with the National Oceanic and Atmospheric Administration and National Geodetic Survey (NGS) to install a 12-inch commemorative disk on the grounds of the USDA in Washington, DC. The disk is now included in the NGS National Spatial Reference System of high-accuracy reference points, providing the foundation for transportation and communication systems and other uses. Smaller replicas were placed on 17 national forests throughout the country [including Sagehen Creek Field Station], each of which became part of the National Spatial Reference System."

http://sagehen.ucnrs.org/Photos/maps/NCS_monument_network.jpg

- We have a couple of new (to us) vehicles here at Sagehen this summer. The first is a 15-passenger van for shuttling field trips around, making big shopping trips to Reno for the A.R.C. program & miscellaneous logistics. It's a heavy vehicle that can also haul a trailer for moving snowmobiles, the snowcat, the tractor, etc.

The second vehicle is a pickup truck for visiting researchers. This summer, it's rented to the Lahontan Cutthroat trout researchers who use it for tracking fish up & down the stream, moving cages & building supplies, carrying loads of fish from the hatchery.

- The holidays were challenging for us here at Sagehen, with winter storms taking out the power & phone lines yet again. While Sierra Pacific Power Co. did thin the line this fall, they apparently missed a few bad eggs. The damage included 9 segments & ultimately shorted out our ancient transformer, which had to be replaced.

This transformer had apparently been significantly damaged sometime in the past, causing dirty power that has undoubtedly been the source of the mystifying & intractable network & electronics problems that have plagued us since our arrival in 2001.



- Berkeley Campus Excess, Surplus & Salvage--Cal Overstock & Surplus Den--has generously donated used laptops to Sagehen for use in our Adventure-Risk-Challenge Summer Literacy program.

This is a fantastic help to the kids & to the station. The machines allow the students to learn how to use computers while working on writing & science interp assignments. Meanwhile, Sagehen can free up it's lab computers for other users & reuse work space while the kids are in the field, since the laptops can be stowed out of the way until their return. And without this donation, the new Sedgewick ARC program would have no computers at all.

- Thanks to the Keck Hydrowatch Project, we have finally resolved the power supply problems that have plagued our remote sites for years by upgrading our solar arrays & separating the battery banks for communication from the banks powering data collection. That way, we don't lose all our data gathering ability every time the communications go down. We also added Compact Flash cards to the systems so we can back up the

dataloggers & manually collect the files without having to drag a laptop & cables up the hill. This is a huge benefit since the enclosures are mounted on high towers & it can be dicey & somewhat inaccurate clinging up there trying to read a faint laptop screen & input new IP address settings in a stiff wind. The cards also allow us to quickly grab data during bad weather by simply swapping cards. These system improvements resulted in our first complete winter data set for the extremely exposed Carpenter Ridge site.

- We continue working to upgrade our local area network (wired and wireless) and communications capacity, adding computers, printers and wireless access points.

WEB & MEDIA...

- Local citizen Al Grigarick bought a digital camera & decided to photograph wildflowers to teach himself to use it. He worked with local botanists to ID the plants, which include 200 of the species on our plant list. Sagehen partnered with Al to host this collection on the Sagehen website & make it available to the public.

The images make a great teaching aid for identifying basin flowering plants, since they are organized by color. Al also included an info document & a spreadsheet with his taxonomic identifications & the ID key in case you have trouble figuring out the name from the photo title. In addition to students and the public, the Forest Service uses our plant list and this photo collection to train their seasonal botany workers.

Take a look at this great collection on our "Photos" page.

<http://sagehen.ucnrs.org/photos.htm/>

- We continue to add requested content to our website, including assets for visitors, like a new kitchen inventory list, & scans of popular publications like *Natural History of Vertebrates of the Sagehen Creek Basin, Nevada County, California*.
- We continue to add ephemeral content to our blog, v-log & podcast, expending considerable effort this year in providing more universal file formats, including YouTube.
<http://sagehen.blogspot.com/>
<http://sagehen-video.blogspot.com/>
<http://sagehen.podomatic.com/>
- Three 3-minute stories on the Sagehen Experimental Forest & various research projects here aired in August on KGO Channel 7 News, the San Francisco Bay Area ABC-TV affiliate, and one of the largest TV markets in the country. Read the story transcripts or stream the videos on our websites.
- Our "Sagehen TV" video program is becoming a big success, proving a very useful tool in ways we hadn't anticipated.

The videos we produce are often mini-documentaries about ongoing research at Sagehen. For example, we have programs on the bear-collaring efforts this past summer & the slave-raiding ants soon to be featured in a National Geographic photo-article. Making these videos available for download or podcast on our web site offers the general public a way to catch a glimpse into the work here. Sagehen stock video footage is also used by other organizations that reach a broader audience, like the Bay Area ABC-TV affiliate & local NGOs like the Truckee River Watershed Council.

But we are also finding that passing out DVDs enables various projects to integrate better. For instance, the Keck Hydrowatch technical folks use these videos to get an idea about how field biologists work, what their needs are, & how to design better remote sensing networks to help get the job done. Video on bear research has been used in biologist training & field performance self-evaluation.

Sagehen programming airs on the local television station in Truckee, appearing in the prime time slots Tuesday, Wednesday & Thursday. Along with the documentaries, we also tape & broadcast highlights of our Summer Speaker Series, so that these great presentations can reach more of the community.

<http://sagehen-video.blogspot.com/>

JUST FOR FUN...

- Colin Carpenter, an instructor with Sagehen's Adventure – Risk – Challenge summer literacy program, snagged what appears to be the first kayak descent of Sagehen Creek. You can read all about the ridiculous 2.5-mile, 117-portage adventure on our blog at: <http://sagehen.blogspot.com/2006/06/press-release-first-descent-of-sagehen.html>



Location & Background:

The station is located approximately 13km north of Truckee, Nevada County, California on the east slope of the Sierra Nevada Mountains at an elevation of 2000m. The station is located within the 8,000 acre Sagehen Creek Basin in the Truckee Ranger District of the Tahoe National Forest. has been included for designation as a Wild and Scenic River in a bill submitted to congress by Senator Boxer of California.

The University has a special-use permit for approximately 450 acres (60ha) and 2.4 km of stream. The special-use permit area includes a fen, wet and dry meadows, willow thickets, lodgepole pine stands, mixed ponderosa pine, Jeffrey pine and white fir forest and scattered stands of aspens.

The portion of the Sagehen basin belonging to the Forest Service and not included in the special-use permit area became a designated Experimental Forest in 2005 and is now managed primarily for research by the Forest Service PSW. The Tahoe-Donner Land Trust recently acquired some private land holdings that encroach into the Sagehen Basin and adjacent Independence Basin; researchers and students are allowed to work in these areas.

The Sagehen Creek Field Station serves as the hub for the Central Sierra Field Research Stations (CSFRS) comprised of: Sagehen, Central Sierra Snow Lab, Chickering Reserve, Onion Creek Experimental Forest and the North Fork Reserve. The dispersed area overseen by Sagehen is in excess of 25 square miles.

The climate at the station can be severe with summer nighttime temperatures routinely dropping below 0° C. Winters are snowy with daytime high temperatures averaging around 5° C. Winter access requires snow machine support, snowshoeing, and/or skiing from November to April or May. Summers are typically dry with daytime high temperatures averaging around 25° C.

Sagehen was established in 1951 as part of a program in teaching and research on freshwater fisheries and wildlife funded by the state of California through the University of California, Berkeley. Paul Needham, a member of the faculty of UC in the Department of Zoology and the station's first director, chose the current site on Sagehen Creek because of its suitability for research on trout and other ecologic problems of interest to the Berkeley faculty. The establishment of the field station was made possible by a cooperative agreement between the USDA Forest Service and the Regents of the University of California.

Although initially fisheries work was stressed, from the outset Sagehen was intended to serve a broad spectrum of ecological interests. The station has particularly encouraged long-term studies and monitoring and has provided facilities for research and education in biology, forestry, hydrology, entomology, wildlife and other areas.

For the first several years, the station served primarily as a research base for UC Berkeley staff and students, but since then it has been used by faculty, staff scientists educators and students from many universities, federal, state and local government agencies, non-profit organizations, community groups and K-12 programs. In recent years Sagehen has attracted researchers from New York, Colorado, Illinois, Florida and Texas in addition to California and Nevada.

Over 80 Ph.D. and Masters theses, 340 publications and 8 documentary films have resulted from research at Sagehen.

On-site courses have been offered since 1954 and continue to the present. The use of the facility for classes is an important aspect of the station serving to motivate younger students to pursue

careers in the biological sciences.



Administration:

The Sagehen Creek Field Station (Sagehen) is administered by the Office of the Vice Chancellor for Research, the Berkeley Natural History Museums (BNHM) and the California Biodiversity Center (CBC) an organized research unit, of the University of California, Berkeley.

The BNHM, a consortium of campus museums, including the Botanical Garden, Phoebe Hearst Museum of Anthropology, Essig Museum of Entomology, University/Jepson Herbaria, Museum of Paleontology, and Museum of Vertebrate Zoology, is also responsible for the administration of several other biological field stations controlled by campus. In order to enhance research, the primary goals of the BNHM include the capture, storage, and dissemination of field data through the use of computerized database systems, and the linkage of research activities at campus field stations with museum-based research activities.

The Resident Station Manager at Sagehen is Jeff Brown (full-time employee), the Resident Assistant Manager is Faerthen Felix (full-time employee) and the Faculty Reserve Director is Professor Jim Kirchner. Professor Kirchner also serves as director of all the component reserves within the Central Sierra Field Research Stations group.

Recently, education and teaching programs at Sagehen have increased dramatically and research focus has shifted to hydrological and fire processes. These shifts in types of use at Sagehen, the formation of the CSFRS and acquiring adequate operation funding resources result in the need for a long term strategic plan for the reserve. The Sagehen Reserve Program Planning Advisory Group (SRPPAG) formed to address this need.

Consisting of Sagehen stakeholders representing local, state and national government agencies, community groups and non-profits, universities and educators, the purpose of this organization is to plan for the future of Sagehen in a careful and informed manner.

Research Areas and Habitats:

Sagehen is located on the east slope of the Sierra Nevada Mountains at an elevation of approximately 2000m. It is surrounded by and is part of the Tahoe National Forest. The special-use permit area includes a fen, a large meadow that ranges from dry grass and annual plants to wet, Carex dominated areas, open areas of sagebrush, a large area that was burned in 1960 that currently has large stands of tobacco brush and greenleaf manzanita with young lodgepole and Jeffrey pines. Along Sagehen Creek, lodgepole pines dominate. The balance of the area is mixed coniferous forest consisting primarily of lodgepole, Jeffrey and ponderosa pines and white fir.

Additionally, within the Sagehen Basin are areas of uncut red and white fir, areas of logged red fir and small groves of aspen. At Carpenter Ridge, the highest area of the basin near the Sierra crest, are stands of mountain hemlock; beneath the cirque of the ridge is a small lake and vernal pool.

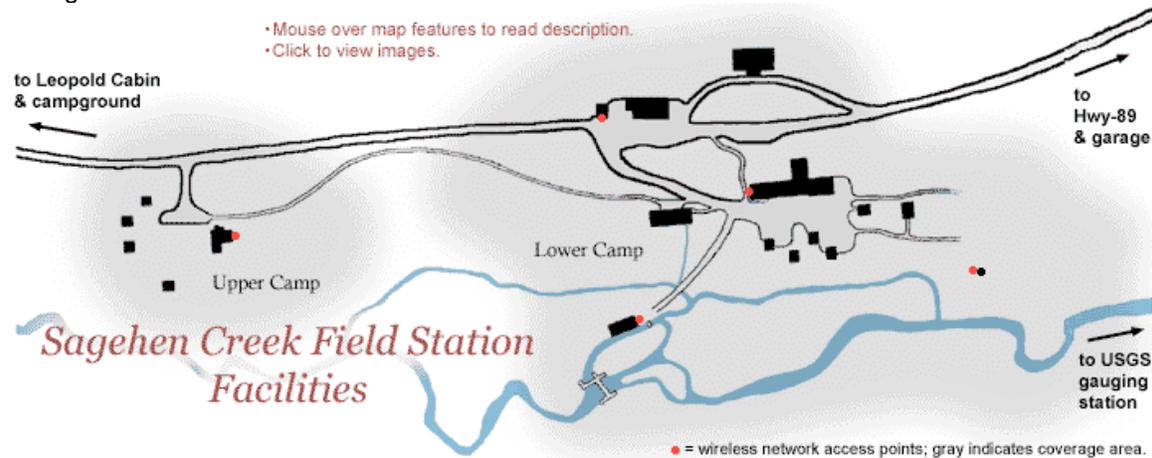
There are areas within the basin that have been heavily grazed by sheep where large stands of woolly mules ear (*Wyethia mollis*) occur in near monoculture. Within close driving distance are small and large lakes, including Lake Tahoe and Pyramid Lake, areas of pinion-juniper, and areas of exposed granite.

Fish populations in Sagehen Creek have been studied extensively. The most important species in the creek are brown, rainbow and brook trout, Tahoe sucker and Piute sculpin. The underwater window has allowed extensive observation of fish behavior and beginning in 2004 includes a live web-cam.

Perhaps the most important attribute of the Sagehen basin is the 50 year record of research and monitoring covering nearly all species of vertebrates, many aquatic invertebrates, fire succession and vegetation, stream flow, water quality and weather data. Much of this information is available on our website or via our GIS system.

Physical Facilities:

The site has 22 buildings. The facilities are divided into three main groups: *the Lower Camp* complex, the *Upper Camp*, and the *Leopold Cabin*. There is also a two car garage located on highway 89 that is used for storage of snowmobiles in the summer and the station's vehicles during the winter.



Sagehen's buildings are aging, built between 1950 and 1960, and in need of renovation and upgrading. Extensive repairs and renovations have been made continuously since 2001, including replacement of doors and windows in the Botany Lab/Classroom, and complete renovation of the Upper Bathhouse and Meadow cabin in 2006-07.

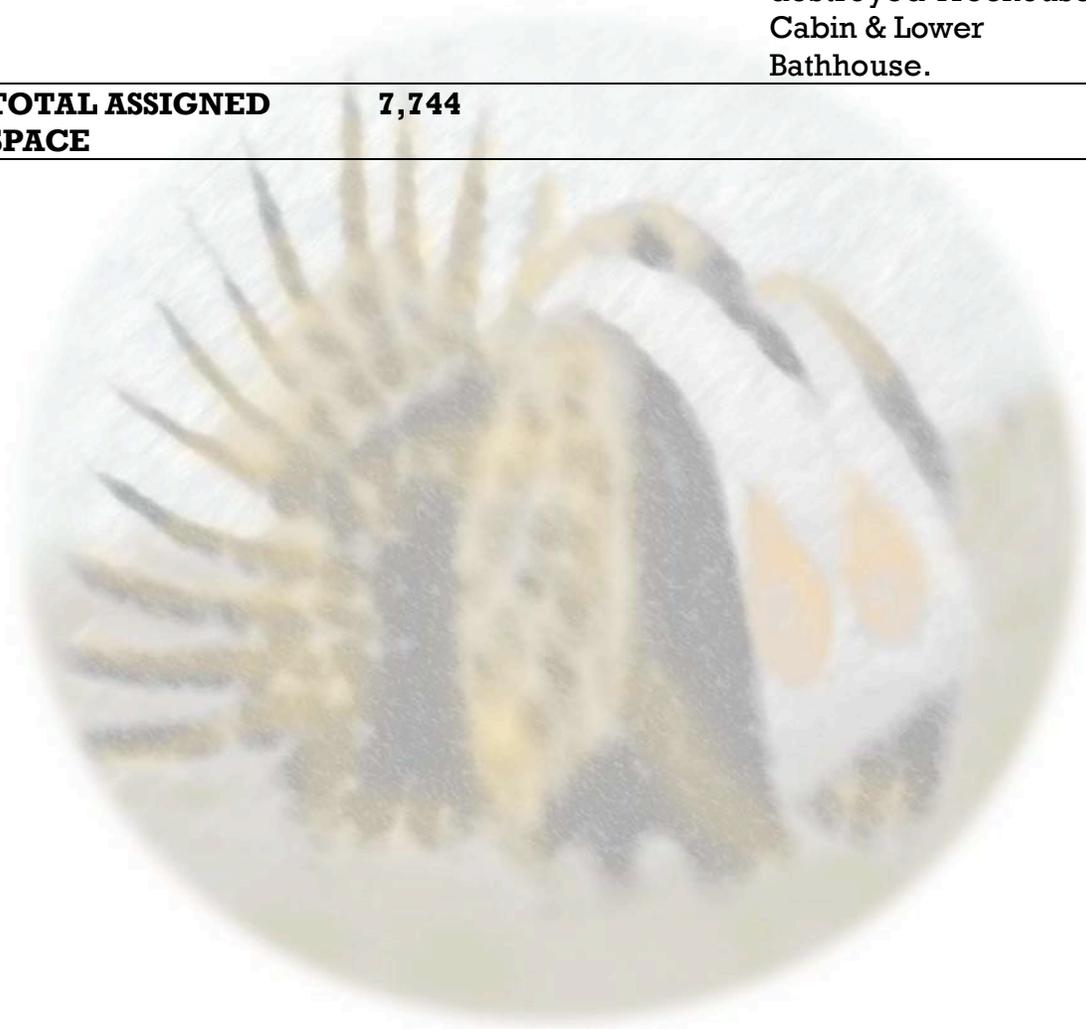
Sagehen can now house a maximum of 53 people in heated, winterized cabins. The station has one dining hall, a small library/conference room, and three kitchen spaces where researchers and visitors may prepare their meals. A large laboratory/classroom building with two separate spaces (one heated) is available for teaching or research and available year round. There is also a separate small, heated wet lab. Additionally, an 8m underwater observation window and web-cam allows research on various aspects of biology of Sagehen Creek.

The station has electrical line power, 4 telephone lines and satellite internet service. Station facilities include a GIS lab located in the library with 1 Dell server, 10 PC's, 1 Mac's, 36" monochrome scanner and 42" plotter with 4 additional printers all networked on a local LAN with satellite internet access and network jacks for an additional 10 PC's. Sagehen also has a dual band wireless network that services the Lower and Upper Camp areas.

There is a wide variety of software available, including ESRI GIS. Sagehen has 2 LCD projectors, an overhead projector, a slide projector, 3 televisions, surround sound system, 2 large projection screens, small projection screen and DVD/VCR for use by researchers and visitors. The station has a current website (<http://sagehen.berkeley.edu>) with an online application/reservation system, online data source links and publications, plants, amphibians, mammals, birds, bony fishes and reptiles lists. There is also extensive station information and on-line teaching tools available on the website, including podcasts, blog and v-log.

Sagehen has a small library with a good selection of local and regional field guides, Sagehen-based theses and reprints of scientific publications. The University of Nevada, Reno library with a good selection of journals and books and inter-library loan from Stanford and UC Berkeley, is only 70 km away. There are extensive teaching collections on site, including plants, mammals, insects and birds.

SPACE ASSIGNMENTS	Square feet	Notes
MEETING/STUDY	413	Classrooms, library
OFFICE & SUPPORT	347	
RESEARCH	467	Fish house
SPECIAL USE	6,532	Housing, storage, shop, vehicle storage
MISC	-207	Square footage lost when windstorm destroyed Treehouse Cabin & Lower Bathhouse.
TOTAL ASSIGNED SPACE	7,744	



Data Collection Ability:

Sagehen has a fully automated weather station that records: temperature, humidity, atmospheric pressure, wind speed, wind direction, solar radiation and ground soil moisture. This data is collected and archived at the Western Region Climate Center and available online.

Working in conjunction with the Desert Research Institute (DRI), 3 additional weather stations were installed progressively up the basin towards the upper ridgeline, and a weather station at the top of the watershed (8,600') was installed in 2004 bringing the total number of weather stations in the basin to 6. There is also a Snotel site on the ridge further adding to weather data that is automatically recorded and archived.

Sagehen became one of 300 sites within the United States, EPA National Atmospheric Deposition Program, site CA50, in November of 2001. This is a national program to sample and analyze atmospheric deposition through precipitation.

Sagehen Creek is a benchmark stream within the USGS benchmark program. Stream water samples are collected on a regular basis and analyzed by the USGS. This data is archived and data is available online.

There is a USGS stream gauging station within the reserve area that has been in operation since the early 1950's. Real time data transmission began in 2004 with the installation of satellite uplink equipment.

Stream gauging sensors were installed in 6 additional locations in Sagehen Creek as well as 4 in Independence Creek (located in an adjoining watershed to the North of the Sagehen Basin) in 2004. Approximately 45 "tidbit" datalogging temperature sensors were installed in Sagehen Creek in 2004 as well.

A combination of radios, wireless networking and internet access bridges allow for data transfer to archiving locations. Expansion of wireless networking capabilities within the basin are ongoing.

Sagehen has been selected as a test location for the Keck Hydrowatch Project and the recently created and NSF-funded Center for Embedded Network Sensing (CENS), which is building substantially on our existing data collection infrastructure

Over Labor Day weekend last year, a contractor flew over the Sagehen basin collecting laser data for highly detailed 3-D mapping needed by the SPLAT researchers in the short term, but incredibly useful to other projects as well. This technology--called LiDAR--allows for amazingly detailed maps of not only the treetops, but also intermediate vegetation heights & bare ground. We were very excited at the prospect of such remarkable detail that could reveal geographic features invisible both from the ground & to conventional aerial imaging. A big thanks to the Berkeley Center for Forestry for providing this excellent resource.

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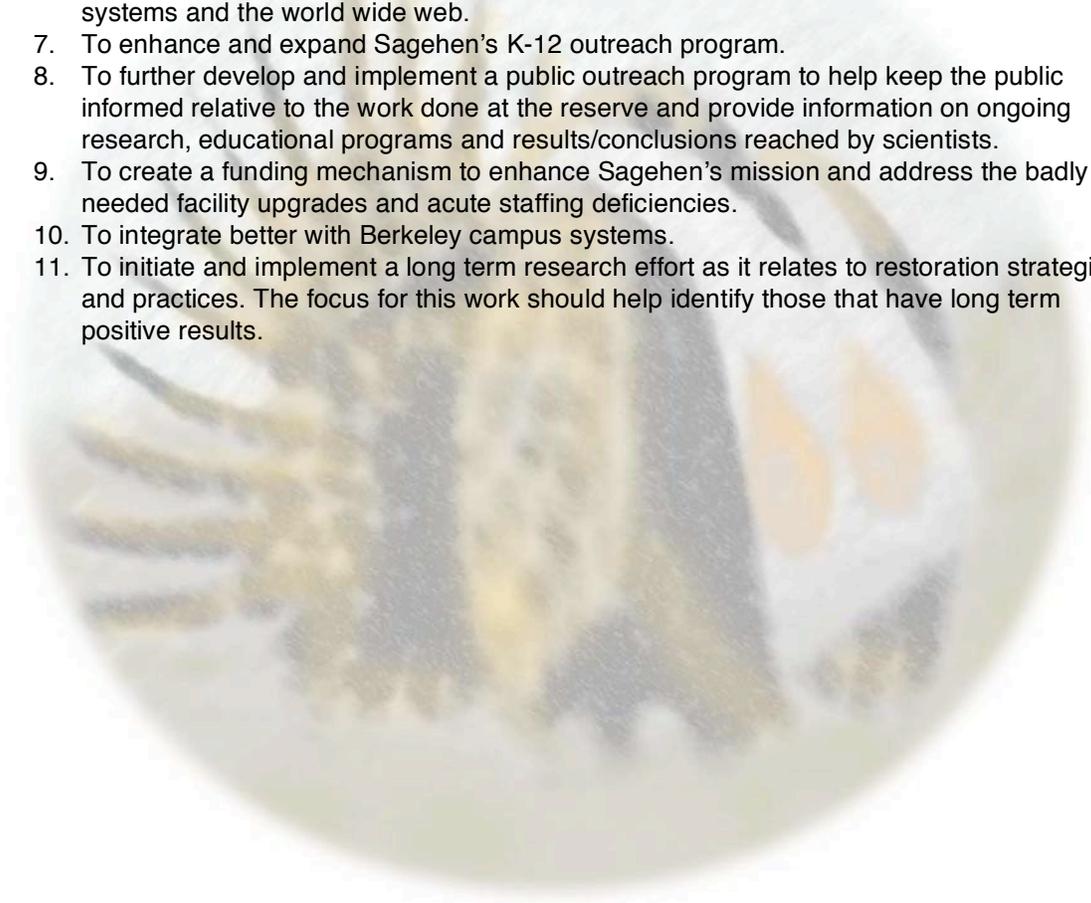
Challenges and Opportunities:



Goals:

The goals of the Sagehen Creek Field Station are:

1. To continue to improve our ability to facilitate research and teaching in general, and to expand the range and types of studies conducted.
2. To secure the entire basin and relevant contiguous areas for future research and education opportunities
3. To restore the basin to as naturally functioning an eco-system as possible.
4. To develop research in areas of social effects on the environment and methods for minimizing the negative impacts created through social impacts.
5. To further focus the research mission for Sagehen and incorporate emerging areas of interest and need.
6. To capture, store, and disseminate field data through the use of computerized database systems and the world wide web.
7. To enhance and expand Sagehen's K-12 outreach program.
8. To further develop and implement a public outreach program to help keep the public informed relative to the work done at the reserve and provide information on ongoing research, educational programs and results/conclusions reached by scientists.
9. To create a funding mechanism to enhance Sagehen's mission and address the badly needed facility upgrades and acute staffing deficiencies.
10. To integrate better with Berkeley campus systems.
11. To initiate and implement a long term research effort as it relates to restoration strategies and practices. The focus for this work should help identify those that have long term positive results.



Current Research:

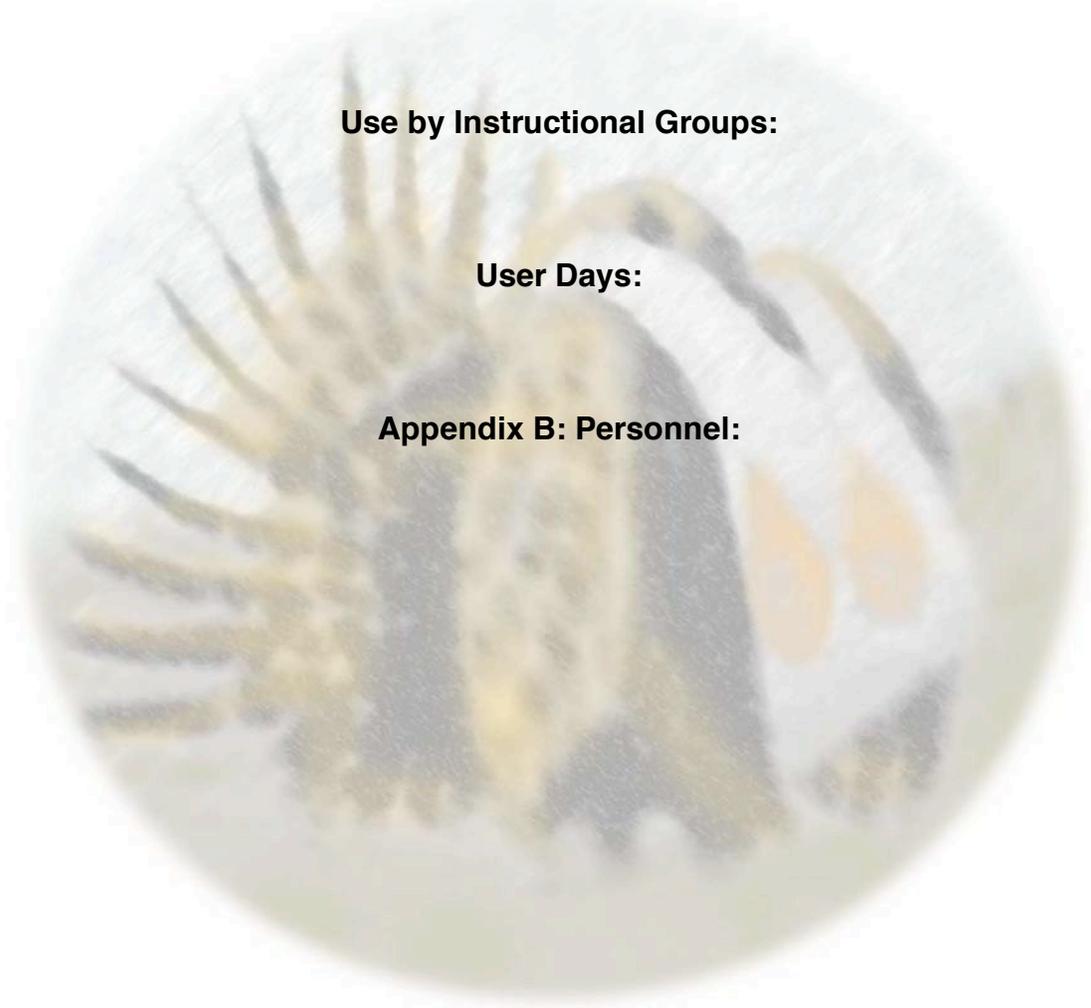
Appendix A: Reserve User Information:

Reserve User Affiliations:

Use by Instructional Groups:

User Days:

Appendix B: Personnel:



Appendix C: Selected Bibliography Attributable to Facility:

Theses:

Year	Author	Degree	School	Title	Ref.
2007	Elise D. Ferree	Ph.D.	UCSC	Tail White and the Influence of Male Attractiveness on Maternal Investment in Dark-Eyed Juncos. 104 pp.	#82
2007	Jonathan E. Stead	Masters	UCD	Exploring Reintroduction of Lahontan Cutthroat Trout in a Headwater Stream. 86 pp.	#81
2006	Carie L. Sears	Masters	UCD	Assessing distribution, habitat suitability, & site occupancy of Great Gray Owls (<i>Strix nebulosa</i>) in California.	#80

Research Publications:

Author	Year	Title	Journal	Ref.
Hughes, S. S.	2006.	UC's Sagehen Creek Field Station at Fifty," an oral history conducted in 2004.	Regional Oral History Office, Bancroft Library, UC Berkeley	PDF - 150 pp.
Karban, R., K. Shiojiri, M. Huntzinger and A. C. McCall	2006.	Damage-induced resistance in Sagebrush: volatiles are key to intra- and interplant communication.	Ecology	87(4), 2006 pp. 922-930

Popular Press:

Author	Year	Title	Journal	Ref.
Countis, S.	2006.	Youth camp receives \$65K grant	Sierra Sun	July 28, 2006.
Olney, J.	2006.	California forests primed for disaster: story & video	KGOTV 7-ABC San Francisco	July 31, 2006.
Sanders, R.	2006.	Grant helps expand UC Natural Reserve outreach	UC Berkeley News	Aug. 2, 2006.
Leachman, S.	2006.	Leadership program for teens expanding into Sedgwick Reserve.	Santa Barbara News-Press	Aug. 5, 2006.
Staff	2006.	How to learn more in 40 days than in an entire school career.	Moonshine Ink	Vintage 4, Nip 9 (Aug, 2006): p. 8
Olney, J.	2006.	California's new Experimental Forest. story & video	KGOTV 7-ABC San Francisco	Aug. 14, 2006
Olney, J.	2006.	Scientists study California bears. story & video	KGOTV 7-ABC San Francisco	Aug. 15, 2006
Staff	2007.	Volunteer Corner: Suzie Cordero. Adventure Risk Challenge Summer Literacy and Leadership Program	Sierra Sun	March 6, 2007
Quesnel, E.	2007.	Connecting with our backyard: 5th	Moonshine Ink	Vintage 5, Nip

Graders visit Sagehen Creek Field Station

7 (June 14 - July 11, 2007): pp. 13

Multi-media:

Author	Date	Title	Outlet	Run time
Felix, F.	7-4-06	Help, I'm lost!: video tour of the Sagehen website.	Sagehen TV	
Felix, F.	7-28-06	Bear research revs up in the Sagehen Experimental Forest.	Channel 6: Truckee-Tahoe Community Television	30:00
Olney, J.	7-31-06	Sierra forests primed for disaster. video	KGOTV 7-ABC San Francisco	03:24
Felix, F.	8-10-06	Sagehen Experimental Forest Dedication Ceremony, June 24, 2006.	Channel 6: Truckee-Tahoe Community Television	52:40
Olney, J.	8-15-06	California's new Experimental Forest. video	KGOTV 7-ABC San Francisco	03:33
Olney, J.	8-15-06	Scientists study California bears. video	KGOTV 7-ABC San Francisco	03:26
Felix, F.	8-17-06	Summer Speaker Series #10: "Plant Communication" with Prof. Rick Karban.	Channel 6: Truckee-Tahoe Community Television	49:40
Felix, F.	8-27-06	Pirates of Sagehen Basin: Slave-Raiding Ants	Channel 6: Truckee-Tahoe Community Television	08:57
A.R.C. Program	2006.	Sagehen Forest Interpretive Signs	Sagehen Creek Field Station	5 large format pp.
Felix, F.	9-29-06	Conservation & Research Agreement signed for the North Fork of the American River: sneak peak at the terrain.	Sagehen TV	00:17
Carpenter, C.	10-7-06	ARC program slideshow	Sagehen TV	
Felix, F.	3-1-07	A Winter Visit to Sagehen	Sagehen TV	11:56
Felix, F.	6-9-07	Why are there so many butterflies all of a sudden?	Sagehen TV/YouTube	04:30

Appendix D: Financials:

