Organization of Biological Field Stations

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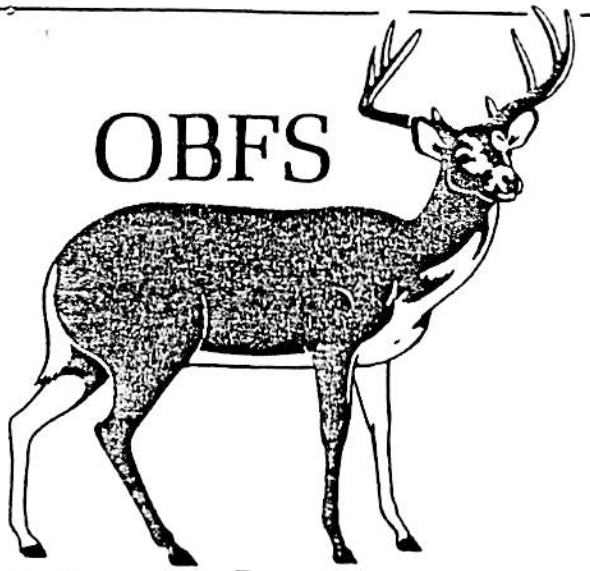

OBFS Newsletter

NUMBER 43 DECEMBER 1986

NEWSLETTER EDITOR

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POWDERMILL NATURE RESERVE
CARNEGIE MUSEUM
STAR ROUTE SOUTH, RECTOR, PA 15677

TABLE OF CONTENTS

HAPPY HOLIDAYS !

I. MINUTES - 1986 ANNUAL MEETING FOR OBFS BUSINESS

SEPTEMBER 26, 1986

CEDAR POINT BIOLOGICAL STATION (CPBS)

In Attendance: From the host station - John Janovy, Jr., Tony Joern, Linda Vescio. Susan Allen, Rocky Mountain Bio Lab, CO; Ken Armitage, Kansas Ecological Res, KS; Nevin Aspinwall, Reis Bio Sta, MO; Michael A. Bowers, Blandy Exp Farm, VA; Jeffery T. Burkhart, Phillips Univ, OK; Laura S. Carter, E.N.Huyck Pres, NY; Peter Connors, Bodega Marine Lab, CA; Daniel R. Dawson, Sierra Nevada Aquatic Res Lab, CA; Jim Edwards, NSF; James L. Elder, School for Field Studies, MA; Robert L. Fisher, Raystown Field Sta, PA; Alan Grundmann, Jasper Ridge Rio Res, CA; Robert W. Hastings, Turtle Cove Bio Res Sta, LA; Steve Havera, Ill Natural History Survey, IL; Philip K. Isaac, Univ Field Sta, Delta Marsh, Winnipeg; John Janovy, Jr., School of Biol Science, NE; Dennis Johns, Rocky Mountain Bio Lab, CO; Jeffery Kennedy, UC Natural Res System, CA; Harold Klieforth, Desert Research Inst, NV; George Lauff, Kellogg Bio Sta, MI; David Mahan, Au Sable Inst, MI; Arthur McKee, H.J. Andrews Experimental Forest, OR; Joseph F. Merritt, Powdermill Nat Res, PA; Mark Noble, Mountain Res Sta, CO; Mark Paddock, Univ Michigan Bio Sta, MI; David F. Parmelee, Bell Museum, MN; James R. Pratt, Hancock Bio[illegible]a, KY; Don Prusso, Whittell Forest & Wildlife, NV; Jerome G. Ro[illegible]., Jr., Amer Museum Nat Hist, NY; Robert Rye, Dept Nat. [illegible]ources IA; Gerald Scherba, Desert Studies Center; CA; Ross F. S[illegible]w, T.B. Crowley Lab, WA; Jennifer M. Shay, Univ Field Sta, Delta Ma[illegible]h, Winnipeg; Wade Sherbrooke, Southwestern Research Sta, AZ; Paul Siri, Bodega Marine Lab, CA; Dave Trydahl, White Mountain Research, CA; Richard L. Wyman, E.N. Huyck Pres, NY;

1. President Layne called the meeting to order shortly after 8:00 a.m. There was universal expression of gratitude to John Janovy and his associates of the CPBS for their warm and friendly hospitality in support of what promised to be an enjoyable and productive meeting.

2. The minutes of the previous meeting (of Sept. 28, 1985) were approved as distributed in a prior newsletter.

3. Report of the secretary-treasurer; Dick Coles -
   a. Membership: The membership totals 120 members (72 station members, 48 individual members). Since the previous annual meeting, 19 new members have joined, 8 have resigned, 12 are delinquent in dues, 10 stations have changed directors, one errant member has been reinstated, and one (Dr. Lloyd Hulbert of the Konza Prairie, Kansas State University, Manhattan, Kansas) has deceased.

   b. See attached treasurer's report, Appendix I.

c. After brief discussion it was agreed to raise the limit under which OBFS reimburses the Washington University Tyson Research Center for secretarial time devoted to OBFS business to a new level of $650. This allows for more precise estimation of the time involved and for an annual increment in pay level.

4. Report of the editor; Joe Merritt - Joe reviewed the Newsletter which appears twice a year. The autumn/early winter issue includes minutes, updated membership list, field station descriptions (of which more are needed and will be recruited), announcements and an election ballot. The spring/summer issue presents additional field station descriptions, members telephone numbers list, announcement of the upcoming annual meeting and other items. The editor welcomes suggestions for improvement of the Newsletter. He also welcomes and will publish announcements of job openings and questionnaires from the members which wish to poll the OBFS membership.

5. Report of AIBS representative; Jerome G. Rozen, Jr.
(see appendix II)
As amplification regarding the possibility of a meeting at the AIBS related to the proposed National Biological Survey, it was reported that only two OBFS officers felt prepared to meet with representatives of federal agencies concerning the question and thus the matter has been left unpursued for the present. It was observed that the attention of the public has recently been focused on the related issue of loss in Biological Diversity and that this issue, more than the proposed inventory, holds the spotlight at the moment. It was observed that field stations should keep abreast of the matter while staying in contact with AIBS.

Jim Edwards (Biological Research Resources of NSF) reported that in its current budget proposal the Smithsonian has requested a significant amount of money for conducting a "test" to demonstrate the feasibility of such a survey. The test would be conducted at the Smithsonian Tropical Research Institute in Panama. They are hopeful that, in spite of other budget cutbacks, the test will be funded. There appears to be no specific role for OBFS to play at this time. If a full survey were to be mounted, the estimated cost is $10-$12 million. At present a full scale survey appears to be quite expensive; the trial version might represent a worthy demonstration.

6. Report of poster editor; Mark Noble - Mark's summary of finances is found in Appendix III.

4800 copies of the 1986 poster were printed. Most of them were distributed to Bioscience Departments in the U.S. and Canada, to chapters of Beta Beta Beta, to OBFS members and to those who requested copies. The cost of a listing ($60) was reestablished for the 1987 edition at the same level; listing is available to OBFS station members only. The 1987 poster will be expanded to include a new category, "international sites". Previously the

secretary has attempted to place a general notice of the poster's availability in various professional newsletters, journals, and conservation magazines; it was agreed that Mark Noble will assume that responsibility. Coles will convey the appropriate address lists, copies of prior correspondence etc.

7. Report on status of field station directory; George Lauff - The history of prior directory efforts was reviewed. The Nature Conservancy (TNC) serves as the curator/repository of materials describing the various field stations as was assembled during the Experimental Ecological Reserves Survey and subsequently.

Efforts by OBFS to stimulate TNC personnel toward submission of a proposal to NSF for funding of a directory generated a draft proposal over a year ago, but needed revisions in the draft have not been made. Joe Merritt, whose location is near to Washington and the TNC office, agreed to serve as a liaison to interact with TNC and to attempt to revitalize this activity.

Discussion then moved to a broader concept, that of the assembly of a large data base (D.B.) of biological knowledge. The impetus for this grew out of a study and workshop by the National Academy of Sciences on the use of animal models in research. A longer workshop, for six weeks in the summer of 1987, is being contemplated to investigate further the design and networking of such a D.B. To date the discussions have not emphasized organismal biology nor other levels of the science which are the primary concern of OBFS. Jim Edwards, who reported on this activity, suggested that OBFS should be keeping abreast of developments here and should be thinking about how <u>our</u> kinds of data might become incorporated into the larger D.B.

Since directories achieve obsolescence rather promptly, it was suggested that the B.D. be kept current and accessible. Perhaps individual stations could be empowered to update the information on their site themselves. The information on educationally active field stations, OBFS members, etc. as a subset of the big D.B. could be extracted to produce a directory of field stations of the sort we envision.

After this discussion it was observed that the compilation of a simple directory on our own could be completed in a short time frame. The Canadian stations have already completed such an effort. Later if and when the more grandiose D.B. becomes a reality, we would of course participate.

We all know of field stations which should be included in a simple directory but which are not members of OBFS. It was decided to contact such sites and invite their participation in the directory process, (and incidentally in OBFS). Lauff and Merritt agreed to lead a subcommittee to push this along.

8. Report of Nominations Committee; Fisher, Shea and Havera - There approaches a vacancy in the position of editor. The committee advanced the name of Joe Merritt to again fill this office. Dr. Merritt has agreed to stand for reelection. As usual, a write-in option will be included in the ballot.

9. Report on slide show featuring OBFS activities; John Janovy - John showed a rough draft of a single carousel slide/tape program on field stations and the educational opportunities they offer. All who saw it were impressed. John expressed his gratitude to those who submitted slides for the project, and expressed a need for additional slides related to deserts, deciduous forests, tundra, and winter. It was moved, seconded and passed to provide up to $500 for improvement of the slide/tape show, preparation, including copying of a revised draft, and circulation of the latter by the secretary's office on a trial basis, to OBFS members who express interest.

10. Report of Program Committee; Mark Paddock - For the 1987 meeting this committee will consist of Armitage, Janovy, Connors and Siri. Ideas were solicited concerning topics worthy of discussion at future meetings. Possibilities raised included: liability, use of instrumentation in field instruction, research reports from investigators working at the hosting station, more extended reports by standing committees of OBFS, education at field stations, reports on special or non-traditional activities at field stations, such as elder hostels, training projects for teachers and natural resource managers, short (non-credit courses etc.) and how different stations handle biological inventories, monitoring and computer use.

11. Future meeting sites:

1987 Bodega Marine Lab and Reserve. Sept 17 - 20

Plan on flying to San Francisco or Oakland, arriving in mid-day to avoid peak traffic in a major metropolitan area. Bus travel to Petaluma (much closer to the lab) is frequent, and easy and thus is heartily recommended. A pre-meeting option was described. Those who arrive on Wednesday, the 16th, will be (weather permitting) taken on the 17th for a 6-8 hour boat trip out to the Farallon Islands. This is a longer trip than can be accommodated into the schedule of OBFS events. Since departure would be early on Thursday, arrival Wednesday and spending the night in or near lab facilities is necessary. Bird watchers, whale watchers, and those who thirst for contact with the sea will enjoy this extra day.

1988 Research Facility of National Audubon Society on the Maine Coast.

1989 Rocky Mountain Biological Laboratory (Crested Butte) and the Pikes Peak Research Station (Florissant) in the Colorado Rockies.

1990 Itasca Biological Station of the University of Minnesota

12. New Business:

a. The American Society of Zoologists is forming a joint study and advisory committee to work with the Division of Ecology at NSF. Participation by other societies, including OBFS, is invited. It was moved, seconded and passed that the OBFS should explore joining in this effort.

b. OBFS Brochure? It was suggested that OBFS prepare a brochure, attractively designed, to carry our message. Content might include a description of what a field station is, what the visiting student or researcher receives, what the benefits of doing research at, or bringing a class to, a station might be, and the OBFS membership list (in small print, if necessary). The brochure should credit OBFS and should be more general than presenting a pitch to only the educational user. It should emphasize the value of field sciences in general, not just biology. A committee of Armitage, Aspinwall, Carter and Johns was formed to work on this project.

The meeting recessed at this point.

SUNDAY MORNING - September 27

c. A committee (chairman, Paddock, membership as yet unspecified) was formed to work toward the holding of a workshop on educational programs of field stations. Presumably the workshop would document the value of educational experiences at field stations and identify needs for facilities, equipment, stipends and scholarships etc. This in turn might generate a program at some federal agency to which educationally focused field stations might apply for support. Mark Paddock has other reasons to visit NSF and will try to meet with someone there whose responsibilities relate to education.

d. President Layne reviewed a cluster of existing and possible standing committees, their titles, responsibilities, and membership. They include: program, (with chairman, past chairman, and at least one additional member; role - to plan program for the upcoming annual meeting and future meetings, based on input from membership); education committee, (chairman Paddock); research committee; committee on administration & facilities; and a committee on history and archives (possible chairman Bob Fisher).

Though in many cases such committees exist and function already, they do not appear in our Constitution and By-Laws. The latter instruments have become out of date, and no longer show good alignment with what we do. Consequently, the president established a committee with Dick Hartman as chairman, to propose revisions in our Constitution and By-Laws. Its report will receive consideration at the next annual meeting.

e. Hal Kleiforth reported that he had heard that the University of Denver Board of Trustees had surprised Bob Angell, director of their field station, by abruptly selling a portion of the station, the portion with physical facilities for housing students, etc. Mark Noble offered to call Bob in order to confirm the report.

The situation reminded Jim Edwards of a sticky situation facing the Association of Systematics Collections (A.S.C.) where an institution may arbitrarily or abruptly decide to be rid of a collection without knowledge of the collections significance. This may occur in cases where the curation/supervisor of the collection has languished because of retirements or changes in academic staff. A notable recent example was the decision by Princeton University to dispense with their well known collection of fossils. Fortunately a new home at Yale was found for most of the valuable material, but not without great anguish and uproar. The A.S.C. has subsequently established a "hit team" which can visit the owner of a collection and try to convince them that the collection deserves to be kept (not necessarily by them) and preserved, rather than being abandoned or discarded. The purpose here, is to let cool heads prevail and to discourage precipitous irreversible actions. The possibility of OBFS establishing a similar group to deal with crisis which may arise between our annual meetings received consideration and may deserve further discussion at a future meeting.

Dick Hartman mentioned that, after a couple of reviews (both favorable) by ad hoc committees (one internal and one external) the University of Pittsburgh has a much improved cognizance of the value and contributions of its Pymatuning Laboratory of Ecology. Dick also mentioned that they will be holding a search for a new director in the coming months.

f. President Layne, speaking for the entire group, expressed again our gratitude to the Cedar Point Biological Station for their hospitality and, especially, for the interesting research project posters which informed us of the work ongoing at the station over recent months. The meeting was then adjourned.

III REPORTS AND PROGRAM ANNOUNCEMENTS

A. OBFS FINANCIAL REPORT

		Balance, September, 1985	$9104.47
Income			
Dues	$3667.25		
Interest on NOW	520.26		
Interest on CD	212.50		
			4400.01
	Invested in CD		[3000.00]*
			10,504.48
Expense			
Office and Miscellaneous			
Secretarial	500.00**		
Postage	135.28		
Phone (toll calls)	35.52		
		670.80	
AIBS Dues		100.00	
Newsletter		433.38	
Refund on dues (overpayment)		10.00	
			1214.18
	Balance, Sept. 24, 1986		9290.30

* $3000. added to CD of $2000., present CD $5000.
**Actual cost $553.00 79 hrs. @ 7.00

* *

NOTES:

120 members - 72 station members; 48 individual members

19 new members, 8 resigned, 10 change of directorship
1 reinstated, 1 deceased, 12 delinquent

NEW MEMBERS

Dr. Michael Bowers - Blandy Experimental Farm, Boyce VA
Sr. Mary Laurence Budde, S.N.D. - Thomas More College
Crestview Hills, KY
Dr. David B. Clark - La Selva Biol Station, Costa Rica
Patricia A. Garvey-Darda - Museum of Vetebrate Zoology,
Berkeley, CA
David M. Darda - Same as above
Dr. Chris Davies - Churchill Studies Centre
Dr. Robert W. Hastings - Turtle Cove Biological Research
Station, SE Louisiana University
Charles E. Kupchella - Ogden College of Science Technology
and Health, W. Kentucky University
Dr. Lyndal Laughrin - Santa Cruz Island Reserve, CA
Linda Leddy - Manomet Bird Observatory, Massachusetts
Elizabeth P. Mallory - Manomet Bird Observatory, "
Arthur McKee - Hubbard Brook Experimental Forest
Campton, NY
Corky McReynolds - Treehaven Field Station, Tomahawk, WI
Dr. Paul Rudy - Oregon Institute for Marine Biology
Dr. Robert P. Rye, Jr. - Conservation Education Center
Guthrie Center, IA
Dr. Charles E. Schnell - Organization for Tropical Studies
Costa Rica
Dr. Robert Singer - School for Field Studies, Cambridge, MA
Dr. Mark K. Stromberg - Appleton-Whittell Research Ranch
Elgin, AZ
Judy Thompson - Hopkins Marine Station, Pacific Grove, CA

CHANGES OF DIRECTOR

Dr. Reginald H. Barrett - Sagehen Creek Station, CA
Lucile A. Housley - Malheur Field Station, OR
Dennis Johns - Rocky Mountain Biological Lab, CO
Anthony Knap - Bermuda Biol Station, Bermuda
Ronald A. Nussbaum - Edwin George Reserve, MI
Dr. Donald Prusso - Whittel Forest & Wildlife, NE
Wade Sherbrooke - Southwestern Research Station, AZ
Dr. G. Robin South - Huntsman Marine Laboratory, NB
Dr. James A. Teeri - Univ Michigan Biol Station, MI
Dr. Lyman Williams - Phillips Univ, Colorado Cam,. OK

RESIGNED

Paul C. Baumann - Ohio State Zoology Museum
Dr. Charles Flora - L. M. Sundquist Maring Lab, WA
Dr. Louis Hilleary - Gold Creek Ecological Res, CA
Dr. Robert J. Naiman - Matamek Research Sta, MA
Dr. Frank Pennington - Eagle Lake Field Sta, CA
Karen Reese - Ohio State University, OH
Dr. Raymond Soltero - Turnbull Lab Ecol Studies, WA
Dr. William Youngs - Arnot Forest, NY

Deceased - Dr. Lloyd Hulbert - Kansas St. Univ. KS

B. Report to Organization of Biological Field Stations

On Representing Them at A.I.B.S. Meetings

At the request of President Parmelee, Dr. Jerome G. Rozen, Jr. attended the A.I.B.S. meetings as the representative of the Organization of Biological Field Stations. He discussed with Dr. Charles Chambers, Executive Director of A.I.B.S., two matters that concern O.B.F.S.: 1) how might O.B.F.S. increase Federal support for the training of undergraduate students, as well as graduate students and others, at field stations and 2) how might O.B.F.S. encourage and be involved with promotion of a national biological survey. Dr. Chambers recommended that the Executive Committee of O.B.F.S. meet at the A.I.B.S. offices in Washington, D.C. and interview persons from Federal agencies and elsewhere, identified by A.I.B.S. staff members as knowledgeable about these two matters. This information was relayed to Dr. Parmelee for his consideration and action.

Again this year the A.I.B.S. placed heavy emphasis on its interest in being the umbrella organization representing all aspects of biology in the public sector, especially with respect to the Federal government and its various agencies. As part of the program, Dr. Rozen with other Council members visited Capitol Hill for briefings in the Sam Rayburn House Office Building. Here, staff members of A.I.B.S. and the Office of Technology Assessment explained and demonstrated the interaction between A.I.B.S. and congressional staffers and the role of this interaction in the relationship of the biological community and Congress.

Dr. Rozen announced that there has been a substantial improvement in the format of "Bioscience," making it a more attractive, usable, and informative publication. Dr. Rozen visited the new offices of A.I.B.S. at 11th and H Streets in downtown Washington. Centrally located, these offices can be used by all adherent societies as a Washington-based meeting place and conference center.

Dr.Jerome G. Rozen, Jr.
Deputy Director for Research
American Museum of Natural History
Central Park West and 79th Street
New York, New York 10024
November 1985

C. Organization of Biological Field Stations

Poster Financial Report

1985-1986

Beginning Balance: (10/31/86)		$ 478.00
Income:		$2082.91
Expenses:		
Mailing List	$128.16	
Office Supplies	$ 29.71	
Postage	$548.88	
Printing	$689.36	
Travel	$ 78.00	
Personnel	$608.00	
Auxillary Expense	70.66	
TOTAL:		$2152.77
		$ 408.14

Balance: $408.14

Prepared 15 September 1986

D. MEMORANDUM FROM OBFS PROGRAM COMMITTEE-- 1987 ANNUAL MEETING

1987 OBFS Annual Meeting

At our annual meeting at the Cedar Point Biological Station the Program Committee initiated planning for the 1987 meeting at the Bodega Marine Laboratory. Based on suggestions for future programs, we decided on four major topics for 1987. Two of these are quickly becoming a traditional part of each meeting. They are:

(1) Field Station Plans and Reports

(2) Presentation of Research Activities at Host Institution

We encourage all those planning to attend the meetings at Bodega Bay, California, to plan a presentation on the activities of your station. Topic number (2) will be integrated with field trips that will be organized by our hosts.

The other two topics are:

(3) Non-traditional Programs (e.g., teachers workshops, gifted students, etc.)

(4) Biological Inventory & Monitoring (information to workers, etc.)

We need some addtional volunteers who will make a presentation at the meeting on one of the two topics. We need several for each topic so that we can organize a program that will present a variety of examples of what is going on in each area. We would like to move forward with our plans during the winter. Please take time now to send your proposed topic to Ken Armitage, Department of Systematics and Ecology, The University of Kansas, Lawrence, Kansas, 66045.

Program Committee

Peter Connors
John Janovy, Jr.
Paul Siri
Ken Armitage, Chair

E.

OBFS
RESULTS OF QUESTIONNAIRE

Education at Field Stations

I. MAJOR ACTIVITIES AT BIOLOGICAL STATIONS:
(Average of 45 responses)

Research comprises 50% of total activity
Education comprises 42% of total activity
Other activities comprise 8% of total activity

In order of frequency of listing, "other" activities include:

1st workshops, seminars, conferences and meetings
2nd public relations
3rd community education and service
4th field trips, hiking, bird watching, etc.
5th family and church group gatherings

II. THE MAJOR COMPONENTS OF EDUCATIONAL ACTIVITIES AT FIELD STATIONS ARE:

80% offer undergraduate and graduate courses for credit
67% offer graduate courses for credit
49% offer general community education and service (tours, field trips, talks, etc)
33% offer adult education courses
29% offer secondary school courses
29% offer elementary school courses
22% offer other educational activities (volunteer research, advising student research, field trips for university students, agency meetings, elderhostel and courses for elderly)

III. THE AVERAGE NUMBER OF UNIVERSITY LEVEL COURSES OFFERED PER YEAR (by the field stations that offer courses):

6.5 undergraduate level courses during the entire year
4.5 undergraduate level courses during summer only
5.5 graduate level courses during the entire year
4.0 graduate level courses during the summer only

IV. IT APPEARS THAT ABOUT HALF THE FIELD STATIONS OFFER COURSES ONLY IN THE SUMMER AND ABOUT HALF ALSO OFFER COURSES DURING THE ACADEMIC YEAR.

V. THE AVERAGE NUMBER OF STUDENTS PER COURSE AT THE FIELD STATIONS IS TWELVE.

VI. AVERAGE NUMBER OF STUDENTS ENROLLED IN RECENT SUMMERS AT BIOLOGICAL STATIONS:

1986 - 54
1985 - 57
1984 - 50
1983 - 50
1982 - 51

AVERAGE NUMBER ENROLLED DURING RECENT ACADEMIC YEARS:

1985-6 - 118
1984-5 - 143
1983-4 - 142
1982-3 - 140

VII. OF THE STUDENTS ENROLLED AT THE RESPONDING STATIONS:

71% reside at the station and 29% commute
62% are from the home institution and 38% are from other schools, etc.

VIII. FACULTY TEACHING COURSES AT THE STATIONS ARE:

Exclusively from the home institution at 30% of the facilities
Exclusively from other institutions at 9% of the facilities
Come from both sources at 61% of the facilities

IX. THE COURSES OFFERED AT THE FIELD STATIONS APPEAR TO BE WELL INTEGRATED INTO THE CAMPUS CURRICULUM . THE GREAT MAJORITY ARE APPROVED BY CURRICULUM COMMITTEES, LISTED AS PART OF THE CAMPUS CURRICULA, AND IN CAMPUS BULLETINS. A SMALLER PROPORTION OF COURSES ARE PART OF BIOLOGY DEGREE PLANS FOR THE HOME INSTITUTIONS.

X. FIELD STATIONS ARE REPRESENTED IN THEIR HOME INSTITUTION DEPARTMENTS (listed by frequency of mention):

The director is a faculty member of the department.
Station faculty are members of the department faculty.
The station is an integral part of the department.
The director and/or a faculty member is on the department's executive committee.
The station is used by a consortium of colleges or universities.

XI. DO FIELD STATIONS TEACH COURSES THAT ESSENTIALLY DUPLICATE COURSES ON CAMPUS?

75% of the respondents said no.
25% of the respondents said yes.

XII. COURSES THAT HAVE HAD GOOD ENROLLMENT IN RECENT YEARS:

1st - Ornithology
2nd - Marine ecology
3rd - General or field ecology
4th - Aquatic biology
5th - Mammalogy (marine & terrestrial)
6th - Ichthyology
7th - Marine invertebrates
8th - Field biology
9th - Flora courses (boreal, alpine, prairie)
10th - Limnology
11th - Animal behavior
12th - Vertebrate ecology

NEW COURSES TO YOUR STATION THAT HAVE DONE WELL:

Animal behavior	Ecological physiology
Biology for teachers	Stressed ecosystems
Mariculture	Remote sensing
Stream ecology	Forest ecology
Marine ecology	Marine mammalogy
Lichenology	Fish biology
Systems ecology	Marine microbiology
Biological oceanography	Field mycology

COURSES AT YOUR STATION THAT HAVE NOT DONE WELL RECENTLY:

Invertebrate zoology	Plant ecology
Entomology	Marine biology
Mycology	Algae

XIII. IN YOUR OPINION, WHAT SORTS OF NEW COURSES AND/OR OPPORTUNITIES SHOULD BE DEVELOPED AND OFFERED AT YOUR FIELD STATION, I.E., NEW DIRECTIONS, DIFFERENT FORMATS, DIFFERENT DISCIPLINES, ETC.?

"The field station needs to assess its role in education at all levels and realize itself as a resource in training not just for research scientists but future policy decision-making citizens in a sound ecologically-based environmental awareness of development:

- Develop courses in agricultural ecology at graduate and undergraduate levels.

- Offer more higher level (400+) courses which extend opportunity for strongly science-oriented students to follow up on basic courses. For example, advertise research-reading courses in animal behavior, animal ecology, microbiology, which revolve around student initiated research projects led by professor in small working groups of 3-4 students (like a group 899 course) or some co-taught courses which logically blend existing teacher talents. E.g., an advanced course in behavior, ecology and evolution of mammals.

- Computer use in field study of ecology/behavior.

- Courses (of equal intellectual quality) directed at teachers of science which give them the background knowledge and also techniques of presentation/ideas for laboratories to teach units in field biology and conservation to their students.

- Structured opportunities for teachers to use the station resources in teaching. (E.g., develop research projects which can be done by high school students or lower at station sites, led by teachers themselves - could be on-going, monitor/measure projects which could be repeated by classes year after year.)"

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"We are considering the addition of graduate level courses, perhaps team-taught with the aid of visiting faculty, which focus on such topics as "Techniques in Field Studies". Such courses might also concentrate on methods used in the study of particular ecosystem types. We used this approach during the mid 1960's."

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"Courses in geology, chemistry, and art easily could be offered at the station as well as a great variety of extension and adult education courses and/or workshops; restricted budgets,

other priorities and interests, and keeping to old routines prevent these offerings from happening very fast."

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"(1) Visiting faculty program should be strengthened.
(2) Develop visiting research scientist program.
(3) Fellowship program for students
(4) Interdisciplinary courses."

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"Our main thrust is advising thesis research at the three universities listed above and presenting periodic seminars. For our staff at the station, this is the most reasonable approach. Periodic courses are also feasible. I don't see changes of this format in the forseeable future unless we have an increase in staff and support budgets."

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"We have recently finished a new $800,000 housing facility that will allow us to offer courses during the regular academic year (non-summer), in addition to our annual summer program. We hope to develop an aquatic studies curriculum."

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"Field genetics, remote sensing."

- - - - - - - - - - -

"Workshops (one week) for schoolteachers, etc.
(1) Birds
(2) Wildflowers
(3) Animal behavior
Elderhostel programs
Research opportunities to be expanded."

- - - - - - - - - - -

"These questions deserve a long bull session!"

- - - - - - - - - - -

"1. Science courses that fit into the curricula of high schools and elementary schools.
2. Service courses for technical colleges.
3. Adult education."

- - - - - - - - - - -

"Surprisingly few undergraduates conduct individual research projects at Jasper Ridge. These opportunities should be expanded and coordinated with the campus curriculum. This should involve more independent research projects as part of established courses and a yearly offering of a field course."

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"Although we have expanded into adult education to help pay the bills, we hope to reduce our dependence on this in the coming years. We plan to increase the number of interdisciplinary programs offered here in conjunction with traditional educational institutions (i.e., a "Man and the Sea" semester at Union College will begin at BBS for two weeks this spring with students moving on to other coastal US locations later in the year). We also would like to sponsor more conferences and workshops in advanced techniques in oceanography and marine chemistry."

"Establishment of summer research experience for undergraduates, to replace a very effective NSF-URP program we offered for many years."

XIV. What should be done to improve coordination and cooperation with home departments in respect to curriculum, student and faculty participation, and researcher's participation?

"Stations should support and enhance department teaching and research training opportunities, and should not be viewed as "competitors". Should serve as "laboratory" for courses which cannot offer a full-fledged field lab on campus. Should work with faculty on campus to provide extended opportunities for students taking campus courses. Should have more direct linkage with advisors/faculty members on campus - more faculty should be encouraged to participate in research, perhaps co-teach some higher level courses."

- - - - - - - - - - -

"We have generally good cooperation with the home department with regard to curriculum (i.e., they accept our recommendations on summer courses). We do need additional faculty appointments with research interests in ecology and an increased number of graduate students in this area."

- - - - - - - - - - -

"Cooperation with home departments could be strenghtened through more interdisciplinary activities."

- - - - - - - - - - -

"-Have more advertisement in department curriculums
-Have more teachers willing to cooperate or work at the field station
-Have an increase in financial support for field station endeavors of teaching - support for both on campus faculty (i.e., travel) and faculty at the station (commodities, travel, etc.)."

- - - - - - - - - -

"Our main problem here is transportation costs to and from main campus (180 miles round trip). We now have facilities to keep faculty from campus overnight any time during the year. This should help. Otherwise we have great support from campus."

- - - - - - - - - -

"Simply more discussion and participation of home department members in the field program."

- - - - - - - - - -

"Solicit course offerings from other departments. Make regular reports on field camp activities to faculty/staff."

- - - - - - - - - -

"Appoint a course coordinator to develop and sell the concept of field courses to user departments."

- - - - - - - - - -

"One constantly needs to actively promote the facility and encourage use."

- - - - - - - - - -

"Because the Preserve is well utilized for field trips, laboratory materials, and graduate level research, the primary need is to increase use of the Preserve by undergraduates seeking research experience. Faculty should be made aware of research facilities and previous background of undergraduate research."

- - - - - - - - - -

"Increase funding."

- - - - - - - - - -

"I would say we are in good shape on that matter."

XV. WHAT DO YOU THINK IS THE ROLE OF BIOLOGICAL FIELD STATIONS IN UNDERGRADUATE EDUCATION?

"Introduce undergraduate student to the process of doing science as well as give hands-on experience with some of the "facts", i.e., taxonomy of live plants, animals; the effect of abiotic and biotic events/states on organisms; the dynamic aspect of communities and importantly the fragility of biological systems. Should teach them to observe and ask meaningful questions about organisms as individuals and communities."

- - - - - - - - - -

"The Biological Field Station presents a unique (perhaps the only opportunity) for students in an urban university to study organisms in the natural environment. It provides students with first-hand experiences not elsewhere available on the undergraduate curriculum."

- - - - - - - - - -

"I believe that field stations are important in giving undergraduates a view of what professional biologists actually do and the conditions that they work under so that students can have a better idea of what, or if, they should pursue in graduate school."

- - - - - - - - - -

"Essential to have field (research) oriented courses. Since most profesionally oriented jobs require data collection and general field perspective."

- - - - - - - - - -

"Provide concrete examples for biological principles that can be illustrated in the field and offer experience in research.

- - - - - - - - - -

"(1) Offer course work not available on home campus
(2) Offer field research opportunities for both students and faculty."

- - - - - - - - - -

"Provide facilities and opportunities for "hands-on" application of a variety of field experiments under field conditions."

- - - - - - - - - -

"To provide an alternate form of education to selected students who are planning careers in the field or laboratory. Most important is challenging students to think, recognize that science is dynamic, and providing a "unique" experience - commitment."

- - - - - - - - - -

"In the case of Stanford, Jasper Ridge is an outdoor laboratory. It is intended to serve the entire University by providing undisturbed representations of the natural community of the region, both for observation and experimentation. It serves as the raw material for hands-on experience as well as providing tangible examples of principles learned in lectures."

- - - - - - - - - -

"To provide an intensive field and laboratory experience without the fragmenting effect of normal campus life. To offer students a glimpse of what independent research is like (nearly all of our courses require a 1-2 week independent research project). BBS is unique in the international flavor of our offerings (this summer 16 countries were represented here."

- - - - - - - - - -

"Field stations offer field and laboratory experience not possible in a campus situation. This kind of experience is invaluable for those undergraduates contemplating graduate school requiring field research.

- - - - - - - - - -

"Basic instruction in field biological methods and problems."

- - - - - - - - - -

"Introduce students to the study of natural resources under actual field conditions."

- - - - - - - - - -

"Introduce students to the study of natural resources under actual field conditions.

- - - - - - - - - - -

"We have been evaluating and re-evaluating that subject for decades in OBFS without much apparent progress or success. In summary, the role is very important, particularly for training students in many disciplines who expect to be employed in a field situation."

XVI. WHAT DO YOU THINK IS THE ROLE OF BIOLOGICAL FIELD STATIONS IN GRADUATE EDUCATION?

"Teach graduate students to do research in field; to organize field observation and design experiments which do test hypotheses; to gather data which can be analyzed; to analyze field data with all its peculiar problems. Train them in use of instruments and techniques. Give them opportunity to get necessary background knowledge, e.g., taxonomy to carry out studies. Act as site where their own independent research is facilitated."

- - - - - - - - - - -

"Graduate students are given a broadened perspective as a result of direct observation and interaction with researchers working in diverse ecosystems. Such experience is essential to graduate students in ecology."

- - - - - - - - - - -

"Field stations give a wonderful opportunity to graduate students to gain field experience to conduct their research, and to decide if they would rather work at a field site or teach on campus. Field station experience helps one decide the direction of their future - whether it be teaching, research, or on campus or off campus."

- - - - - - - - - - -

"Field stations are ideal locations for thesis projects."

- - - - - - - - - - -

"Advanced opportunities for research in current biological theory."

- - - - - - - - - - -

"Provide a study area that is protected and for which long-term data sets are available as well as concurrent ancillary data from relevant research activities conducted by others.

- - - - - - - - - -

"(1) Continuing advanced programs for teachers
(2) Workshops for all
(3) Elderhostels.

- - - - - - - - - -

"To provide instruction in "state of the art" research techniques; to provide a comprehensive and yet critical look at the state of knowledge in the fields offered here at the graduate level."

- - - - - - - - - -

"Jasper Ridge has served, for over 25 years, as a major research site for graduate students in ecology and several other disciplines. By virtue of its proximity to campus (5 miles) it provides a setting where research can be conducted year-round and coordinated with intensive campus-based laboratory or computing studies."

- - - - - - - - - -

"Unique research opportunities."

Mark W. Paddock
September 1986

Comparative Summer Enrollments
Last Ten Years 1977-86
at Seven Selected Biological Stations

Biological Station	77	78	79	80	81	82	83	84	85	86	10 Yr. Aver.
Univ. of Iowa (Lakeside Lab)**	53	36	38	28	48	32	31	42	34	26	37
Michigan State Univ. (Kellogg)**	92	77	92	79	94	53	45	32	39	54	66
Univ. of Michigan (Douglas Lake)*	118	111	128	128	105	103	98	79	124	112	111
Univ. of Minnesota (Lake Itasca)**	94	92	93	88	91	62	74	68	52	56	77
Univ. of Montana (Flathead Lake)*	72	63	77	53	56	62	52	51	45	45	58
Univ. of Oklahoma (Lake Texoma)*	68	88	62	78	67	53	75	55	63	52	66
Univ. of Virginia (Mountain Lake)**	75	72	45	62	37	36	35	31	34	23	45
Total Per Year	572	539	535	516	498	401	410	358	391	368	460

*enrollment for one eight week session
**average of two five week sessions

F. NATIONAL SCIENCE FOUNDATION

1. RESULTS OF FIRST YEAR'S COMPETITION

EQUIPMENT AND FACILITIES FOR RESEARCH AT TERRESTRIAL AND FRESHWATER BIOLOGICAL FIELD STATIONS

A total of 28 proposals was submitted, of which the following 12 were funded:

Andrews Forest (Oregon State)	radios, snowmobile, winterizing, weather instruments	33 K
Archbold Station	building addition	70 K
Cedar Creek (U. Minnesota)	weather station, aerial mapping, growth facility, computer, snowmobile	32 K
Douglas Lake (U. Michigan)	water supply improvements	24 K
Jasper Ridge (Stanford)	balances, drying ovens, incubator, microclimate station, CO_2 analysis, spectroradiometer, aerial mapping	80 K
Kellogg Biol. Station (Michigan State)	computer upgrades	100 K
Pinelands Station (Rutgers)	trailer renovations, autoanalyzer, scintillation counter, carbon analyzer, incubator	100 K
River Research Lab (U. Illinois)	building addition	50 K
Rocky Mtn. Biol. Lab.	winterizing, fencing, grid development, computer, data logger, generator, composting toilet	81 K
Toolik Lake (U. Alaska)	generator, freezers, microscope, balances, computer, drying oven, sleeping and dining facility upgrades	60 K
Trout Lake (U. Wisconsin)	zooplankton counter, HPLC, spectroradiometer, particle profiler	100 K
U. Wisc. Milwaukee Field Station	research garden improvements, electricity & water to animal facilities	22 K

OMB 3145-0058

Keyword Codes
P.T.: 18
K.W.: 1002000, 1008000, 1008005

National Science Foundation

Equipment and Facilities for Research at Terrestrial and Freshwater Biological Field Stations

SUMMARY. A second special competition for the improvement of research facilities and equipment at U.S. terrestrial and freshwater biological field stations is to be held in 1987, with deadline for submission of proposals of January 5 and announcement of the awards totaling about $1,000,000 in June 1987. The maximum award amount will be $100,000 per institution.

DESCRIPTION. In recognition of the importance of biological stations in preserving, providing access to, and fostering research on natural terrestrial and freshwater environments, and in response to the continuing need of these stations for modern instrumentation and facilities, the Foundation announces a second special competition for increased support of terrestrial and freshwater biological field stations to be held in 1987. For purposes of the competition, "biological field stations" are defined as those facilities which (1) preserve a natural terrestrial or freshwater habitat, (2) facilitate research on the organismal or ecological relationships of the plants, animals and/or microorganisms occurring therein, and (3) qualify at least as a Phase II site as defined in the publication *Experimental Ecological Reserves: A Proposed National Network* (published by the National Science Foundation in 1977). Phase II sites must be able to accommodate a group of research personnel on a seasonal basis and have some provision for year-round use. Utilities, shop and storage facilities, housing and food must all be available on-site. A resident caretaker or maintenance person must be provided year-round, as well as on-site technical staff seasonally. A full-time director and a site advisory committee must be in place, and a plan for year-round monitoring and data base development be already implemented.

Proposals for this special competition will not be accepted from agricultural research stations or from marine biological laboratories, including those on the Great Lakes. However, those stations that can document a combination of both marine and terrestrial/freshwater research emphases will be allowed to submit proposals for items specifically devoted to the terrestrial and freshwater components of their programs.

Proposals will be accepted from U.S. colleges, universities and other institutions with formally constituted biological research programs at terrestrial and freshwater field stations. While many such laboratories combine both research and education, funding in this special competition is limited to support of research functions. Only a single proposal may be submitted per field station. The Foundation welcomes proposals on behalf of all qualified applicants, and strongly encourages women, minorities, and the handicapped to participate fully in this competition.

Proposals should be focused on specific projects of facility refurbishment or rehabilitation, including new multi-user instrumentation, research laboratory renovation, and improvements to facilitate handicapped scientists. Requests for special-purpose, off-road vehicles, including boats, are allowed but must be especially well justified. Explicit plans for the care and maintenance of all requested items must be presented, including consideration of long-term maintenance or service contracts. Requested support should be of limited duration (up to 2 years). No support will be allowed for routine operations, indirect costs (overhead) or the salary of the Principal Investigator(s) or other senior personnel. The costs of maintenance, technical personnel, and operation of commercial instruments will also not be provided. Assumption of these types of costs by the submitting institution is strongly encouraged as an indication of its commitment to the proposed project. Expressions of institutional commitment to the facility and the proposed project in the form of matching funds or cost contributions, although not mandatory, will greatly strengthen a proposal. All requests must be directly related to research needs rather than to training activities.

In 1987, approximately $1,000,000 will be available. As a result only a few awards can be made, at a maximum of $100,000 per institution. Major criteria to be used in evaluating proposals are: (1) Scientific merit of the research that would be permitted or enhanced by access to the equipment or renovated facility; (2) Evidence of research use and demand for the facility, including both broad use within the institution, and regional and/or national utilization of the facility; (3) Demonstrated need for the items requested, including multi-investigator and/or multi-departmental usage; and (4) Plans for effective management of the facility for efficient use by both resident staff and visiting investigators.

Review will be conducted with advice from an external advisory committee and experts from the research community. The deadline for submission of proposals to be funded in 1987 is January 5, 1987, with awards to be announced June 1987.

General information on the preparation of proposals and the review process, including standard forms to be used (Appendices II-VI), can be found in *Grants for Scientific and Engineering Research*, NSF 83-57.

Please submit 20 copies of the proposal to the Foundation's Data Support Services, Room 220, National Science Foundation, 1800 G St., N.W., Washington, D.C. 20550. The proposal should contain the following information, in the order indicated:

A. *Cover page*, signed by the P.I.(s) and an authorized institutional representative (Appendix II).

B. *Project summary* (no more than a 20-line synopsis of the importance of the station and of the proposed project).

C. *Results from Prior NSF Support* (if any of P.I.s have recieved NSF support in the preceding 5 years) (see NSF Important Notice 96 for format and contents).

D. *Narrative* (limit to 15 single-spaced pages, exclusive of illustrative and tabular material), to include: (1) Introduction, histori-

cal perspective and uniqueness of the site; (2) Description of the present physical facilities, data base development and administration of the station; (3) Utilization of the station for research for the last 5 years, including a roster of all research users with their sources of support for research at the station and a list of publications of research performed there; (4) Future research plans and potential of the station; (5) Items being requested, with full justification for each, including specific research goals that would be enhanced by the requested equipment or facility improvements; (6) Plans for the care and maintenance of all requested items; (7) Mechanism for advising the national biological research community of the increased availability and enhancement of the facility and associated resources, if appropriate.

E. *Bibliography* of pertinent literature.

F. *Curriculum Vitae*, including a list of *all* publications in the last five years, and Current and Pending Support Statement (Appendix VI) for the P.I.(s) and, if appropriate, brief biographical sketches and summaries of research accomplishments and interests for selected other users of the facility.

G. *Budget* (Summary Proposal Budget, NSF Form 1030) (Appendix V).

H. Any needed technical appendices (for example, technical plans for refurbishment requests, specifications of requested equipment items, etc.).

I. Proof of compliance with the Flood Disaster Protection Act of 1973 (NSF *Grants Policy Manual*, Section 797).

Inquiries should be addressed to:

Dr. James L. Edwards, Program Director
Biological Research Resources Program
Division of Biotic Systems and Resources
National Science Foundation
Washington, D.C. 20550
Phone (202)357-7475

NOTE

The Foundation provides awards for research in the sciences and engineering. The awardee is wholly responsible for the conduct of such research and preparation of the results for publication. The Foundation, therefore, does not assume responsibility for such findings or their interpretation.

The Foundation welcomes proposals on behalf of all qualified scientists and engineers, and strongly encourages women and minorities to compete fully in any of the research-related Programs described in this document.

In accordance with Federal statutes and regulations and NSF policies, no person on grounds of race, color, age, sex, national origin, or physical handicap shall be excluded from participation in, denied the benefits of, or be subject to discrimination under any program or activity receiving financial assistance from the National Science Foundation.

NSF has TDD (Telephonic Device for the Deaf) capability which enables individuals with hearing impairment to communicate with the Division of Personnel and Management for information relating to NSF programs, employment, or general information. This number is (202) 357-7492.

Catalog of Federal Domestic Assistance Category 47.051 (Biological, Behavioral, and Social Sciences).

IV.

HOUSING SURVEY

Housing for researchers and students is a pressing need at our (and presumably other) field station. I would appreciate your help in identifying the kinds of housing you provide, the kinds you find most useful, and creative ways of financing the construction of servicable housing.

1. Background (Check all that apply)
   a. Educational activities at field station
____ Undergraduate ____ Graduate ____ Community/Continuing Ed ____ None

   b. Use periods ____ Summer ____ Year-round ____ Other (Specify) _____

   c. How many persons can be housed at your facility?
____ Undergrads/Grads ____ Independent Researchers ____ Faculty

   d. How far away is your field station from your parent university (mi) _____

e. Is your housing ___ Inherited from previous owner ___Built for station ___ Both

2. Housing Units
   a. Kinds of housing
____ Tents/Cabins (no toilet/bath and or cooking) ____ Cabins (with toilet/bath)
____ 'Homes' (with toilet/bath and cooking) ____ Dorm/Bunkhouse/Barracks

   b. Communal toilet/shower facility? ____ yes ____ no

3. Do you consider your present housing ____ adequate ____ inadequate
4. If inadequate, why?
____ Low capacity ____ Units too large ____ Units too small ____ Need more

5. For short-term use (e.g. field trips, workshops), which kinds of units would be most useful? ____ 2-4 persons ____ 4-8 persons ____ more than 8 persons

6. For longer-term use (e.g. summer courses) which kinds of units would be most useful? ____2-4 persons ____ 4-8 persons ____ more than 8 persons

7. For temporary independent researchers or faculty, which units would be most useful?
____ Efficiency units (common kitchen -living room -bedroom)
____ 1-bedroom ____ 2-bedrooms ____ more than 2-bedrooms

8. Maintenance
   a. Do you have a permanent maintenance person? ____ yes ____ no
   b. Are your units ___ Tents ___ Woodframe ___Brick/Stone ___Log
   ___ Metal/Mobile home ___ Other (specify) _____

9. How are/were your units built? ____ Volunteer labor ____ Contractor
___ Station maint./Constr. crew ____ University Maint./Constr. crew

10. If you have been successful in creatively solving the problem of obtaining labor, materials, and/or funding for housing, please describe briefly on the back

PLEASE RETURN COMPLETED QUESTIONNAIRE TO:

Dr. James R. Pratt, Director
Hancock Biological Station
Murray State University
Murray, KY 42071

V. FIELD STATION DESCRIPTIONS

A. SIERRA NEVADA AQUATIC RESEARCH LABORATORY

The Sierra Nevada Aquatic Research Laboratory (SNARL) is a natural reserve in the University of California's Natural Reserve System (NRS). The purpose of the NRS is to maintain examples of California's ecological diversity for research and teaching. SNARL is open to any groups or individuals who have teaching or research interests in the area.

SNARL and Valentine Camp at Mammoth Lakes together comprise the Valentine Eastern Sierra Reserve. Situated thirteen miles southeast of the Town of Mammoth Lakes, thirty-five miles northwest of Bishop, CA and approximately one hundred eighty miles south of Reno, NV, SNARL lies just below the steep eastern slope of the Sierra Nevada, at an elevation 7000 ft. (2100 m). A typical eastern Sierra trout stream, Convict Creek, flows through the property, draining a basin of alpine lakes surrounded by peaks reaching 12,000 ft. Within SNARL the creek has a natural section and four experimental sections controlled with dams, weirs and fish barriers. Typical riparian vegetation of willow, aspen and birch surround all the channels, and a Great Basin sagebrush community occupies the surrounding valley. SNARL provides convenient access to a wide variety of habitats and topography including: alpine lakes, alkaline lakes and ponds, geothermal waters, reservoirs, many mountain and desert habitats, glacial and volcanic landforms and examples of specialty wildlife habitat such as pupfish pools and sage grouse leks.

SNARL is outfitted with wet and dry labs, a radiology lab, fish house with circulating stream water, fish ponds and observation towers, offices, work-shop and garages. SNARL provides basic laboratory support and large equipment items such as: high-quality water system, analytical balance, refrigerators, freezer, incubator, drying oven, electrofisher, scintillation counter, etc. Private and semi-private housing accomodations for forty persons are available. A resident manager is present to assist and advise users of permissable and safe on-site and off-site activities. SNARL is open year round, providing unusual opportunites for winter study and instruction. The 1.5 mile access road from Highway US 395 will be kept open but all users must provide their own transportation in the field and be prepared for occasional road closures. A complete environmental monitoring program including standard climatological instrumentation, stream flow and temperature, in an easily accessed computer format is under development.

Examples of recent use of SNARL include:

Studies on the limnology and geochemistry of Mono Lake

Comprehensive sub-alpine watershed study with emphasis on potential impacts of acid precipitation

Winter field study in snow hydrology, remote sensing and water resources

Study on mechanisms of mate selection on sage grouse leks

Monitoring and analysis of seismic and volcanic activity in Long Valley

Class, *"Geology Summer Field Camp"*, 56 students

Overnight fees:

Summer (May 1 - Oct. 31)	$4/person-night	University of Calif. students, faculty and staff
	$8/person-night	Non-UC
Winter (Nov. 1 - Apr. 30)	$8/person-night	UC
	$12/person-night	Non-UC

Additional charges are made for lab space, offices, stream channels, etc. Reduced rates for class groups and long-term researchers may be negotiated. Graduate and undergraduate student use is encouraged. Spouses and family members are generally not accommodated unless engaged in research. Pets are not allowed.

Persons or groups desiring to use the reserve or needing more information should contact:

Shirley Clarke, Marine Science Institute, University of California, Santa Barbara, CA 93106, (805) 961-4127

Field Station Description submitted by: Daniel R. Dawson, Manager
Valentine Eastern Sierra Reserve

The Kansas Ecological Reserves (KER) consists of about 1650 acres of prairie, old farmland, and woodland. The KER are located about 10 miles from The University of Kansas campus in Lawrence. Because of the close proximity to Lawrence, housing and eating facilities have not been developed. Although the KER are widely used for teaching, all classes use laboratory space on the main campus. Because of poor funding of the summer school program, no field courses are taught during the summer.

The KER consists of two types of areas. Slightly more than half of the areas were established to preserve woodlands of eastern Kansas. The largest of these areas is the Fitch Natural History Reservation. The reservations are used for teaching and research that can be done with minimal disturbance. Limited collecting is possible; most work emphasizes the description of natural processes. The woodlands are undergoing slow succession, but much of the areas is mature. These woodlands are dominated by oak and hickory, with sycamore along the stream bottoms and elm dominating the early succession stages. Magnificent walnut are common; among the smaller trees are paw paw.

The second set of KER was established for experimental manipulation. The Rockefeller Tract contains 10 acres of natural tall grass prairie. This prairie is maintained by regular burning. Four 15-acre parcels were re-seeded to prairie grasses in 1957. In 1962, when the grasses were well-established, a treatment program was initiated. One parcel is burned annually, one is mowed, one is grazed, and the fourth is untreated. The burned and mowed tracts have fine stands of prairie grasses. The grazed tract has been invaded by shrubs and trees such as honey locust, that cattle do not utilize. Most of the untreated area is well-covered with trees (primarily elm) and shrubs, such as red-osier dogwood. Only the most careful observer can detect any sign that the tract contained a fine stand of prairie grasses only 14 years ago.

Most of our current activity is concentrated on the Nelson Environmental Study Area (NESA). On NESA any manipulations are allowed as long as they can be justified scientifically. Research facilities include eight small mammal enclosures that are used to study population dynamics and dispersal in the prairie vole or dynamics of the small mammal community. A reservoir and ten ponds provide opportunities for the experimental manipulation of aquatic communities. The reservoir is filled with water pumped from a well that taps the Kansas River aquifer. The water is aged in the reservoir. Several ponds can be filled with a uniform aquatic community from the reservoir. Some of the ponds have internal partitions that divide the pond into four sections. Thus, some ponds or sections can serve as controls while others receive treatments. Most of the research has focused on the effects of herbicides on the aquatic ecosystem. The concentrations of herbicides used have been those considered safe. However, marked effects on community structure can be demonstrated.

Another area at NESA was set aside as a Biotic Succession Facility. The facility combines old-field succession with island biogeography. Islands of three sizes were established in a "sea" of closely-mowed meadow. Small mammal use of the different sized islands varies considerably; this research is the topic of a doctoral dissertation. In addition to the mammal studies, insect and plant studies are ongoing. One major project is examining the effects of herbivores on plant succession.

The KER provides facilities for the entire University community. The Kansas Geological Survey operates a seismic station (I'll bet you Californians didn't know we have earthquakes here in the mid-west). One of the newest projects involving faculty from several departments is a study of acid precipitation. Precipitation collectors are being established in the open field and in the woodland.

NESA also has a common garden area where plants can be grown for genetic and other studies. A full weather station is maintained. A small building provides office space, several laboratory rooms, and modest sleeping and eating facilities.

The Kansas Ecological Reserves are administered by the Experimental and Applied Ecology Program. The Director of the program is also the director of KER. There also is a full-time Associate Director, a full-time biological maintenance technician, and two half-time research assistants. Two residences are occupied by faculty or students who provide protective surveillance in exchange for a modest rental charge.

Cooperative research with scholars from other institutions is encouraged. Any of our facilities can be used for a modest fee by investigators from other institutions.

Each year on the first Sunday of October we hold a field day for new graduate students and any others who are interested. Come and join us next year.

Field Station Description submitted by: Ken Armitage, University of Kansas

VI MISCELLANEOUS

IF THIS SIGN IS PROPERLY DISPLAYED ON YOUR OFFICE OR LABORATORY, STUDENTS AND/OR THE DEPARTMENT CHAIRPERSON WILL PROBABLY LEAVE YOU ALONE!

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- Occasionally about 4 or 5, but sometimes as late as 11 or 12.
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and lately I've been here just about all the time
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VII. NEW MEMBERS IN OBFS -- WELCOME!

Dr. David B. Clark (Individual membership)
La Selva Biological Station
University of Costa Rica
Ciudad Universitaria
Costa Rica, C.A.

David M. Darda (Individual membership)
Museum of Vertebrate Zoology
University of California
2593 Life Sciences Bldg
Berkeley, California 94720

Patricia Garvey-Darda (Individual membership)
1329 B Arch Street
Berkeley, California 94720

Dr. Chris Davies (Station membership)
Churchill Northern Studies Center
Box 610, Churchill
Manitoba, Canada ROB OEO

Arthur McKee (Station membership)
USDA Forest Service
Hubbard Brook Experimental Forest
RR 1, Box 97
Campton, NY 03223

Dr. Paul Rudy (Station membership)
Oregon Institute of Marine Biology
University of Oregon
Charleston, Oregon 97420

Robert P. Rye, Jr. (Individual membership)
Conservation Education Center
Rt. 1, Box 53
Guthrie Center, Iowa 50115

Don C Aabel I
Pigeon Lake Field Sta
204 North Hall
U.W. River Falls
River Falls, WI 54022

Susan Allen, Dir S
Rocky Mountain Bio Lab
P.O. Box 519
Crested Butte, CO
81224

David C Allison S
Dept of Biology
Monmouth College
Monmouth, IL 61462

Dr Robert W Angell S
Dept Biol Sciences
High Alt Laboratories
University of Denver
Denver, CO 80210

Dr Kenneth Armitage S
Exp & Applied Ecology
Div Biol Sciences
University of Kansas
Lawrence, KS 66045

Dr Nevin Aspinwall I
St Louis U Biology
Reis Biological Station
3507 Laclede Avenue
St. Louis, MO 63103

Dr Reginald Barrett S
Sagehen Creek Field Sta
Uni California Forestry
145 Mulford Hall
Berkeley, CA 94720

Dr. George T Baxter I
Knight Science Camp
Dept Zoology & Physiol
University of Wyoming
Laramie, WY 82071

Dr Walter B Bohl S
Int Field Studies
Forfar Field Station
2199 E Main Street
Columbus, OH 43209

Dr Richard Bovbjerg I
Iowa Lakeside Laborator
Department of Biology
University of Iowa
Iowa City, IA 52240

Dr Michael A Bowers S
Blandy Experiment Farm
Univ of Virginia
P.O. Box 175
Boyce, VA 22620

Dr Charles Boylen S
Rensselaer Fresh Water
Institute MRC 201
Rensselaer Polytechnic
Troy, NY 12181

Dr Ranier H Brocke S
Cranberry Lake Bio Sta
249 Illick Hall
State Univ of New York
Syracuse, NY 13210

Dr D J Brown I
Bishop's University
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Dr Richard C Bruce S
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P.O. Drawer 580
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Sr Mary Budde S.N.D. I
Biology Department
Thomas More College
Crestview Hill KY 41017

Dr Jeffery Burkhart S
Phillips Univ Colorado
Dept Biology
Enid, OK 73702

Dr Diane M Calabrese I
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