

REPORT ON THE ACTIVITIES
OF THE
JACKSON HOLE BIOLOGICAL RESEARCH STATION
SUMMER 1963

L. Floyd Clarke, Director

PHYSICAL FACILITIES

During the past year two major improvements were made in the physical facilities of the Research Station. Both of these were financed and carried out by the Grand Teton National Park. The first of these involved the establishment of a sewage drainage system from the large septic tank installed the previous year. This drainage system carries the effluent to an area outside of the Research Station boundary and allows for drainage through a system of cross pipes. This results in the elimination of any possible surface sewage waste material in the area. The second project involved a complete rewiring of all outside electrical connections together with the installation of new fuse boxes for the Station as a whole and for each of the cabins. Some additional work still remains involving inside wiring, which we hope to have completed early next year.

Additional gravel was added to the driveway, and general Station improvements were effected.

The Station is still in need of the two major improvements referred to in last year's report.

1. A seminar-library building which will serve effectively as a study room for research workers and will increase the space available for seminars as well as result in greater convenience for those attending. The seminars are held in the director's home. The University of Wyoming 1963-65 budget contains funds for this construction, however, with the short-term lease now in effect between the Grand Teton National Park and the University of Wyoming and New York Zoological Society, we are reluctant to proceed with this construction especially since the Park Service has been considering plans for moving the Station to a new location.

2. We should also like to proceed with the elimination of our present bunkhouse and replacement by a more adequate building.

The Research Station staff would prefer to remain at the present location under a long-term lease and continue with the construction and improvement of facilities.

SEMINARS

Weekly seminars were held at 7:30 P.M. each Thursday at the home of the Director. These seminars proved to be stimulating to the research workers at the Station as well as many interested visitors. The following is a list of the seminars presented during the summer.

Margaret Altmann - Communication between species and within species of wild ungulates.
 Kenneth L. Diem - Substrate influences on the physiological ecology of dependent plant and animal populations.
 Glenn A. Noble - Biological science in Taiwan.
 John Rumely - Program for the study of plant ecology in Grand Teton National Park.
 Ralph Dimmick - Canada goose population study.
 Gerald Scherba - Social organization of ants.
 William Thurmond - Study of melanophore-stimulating substances in the amphibians.
 John Merkle - Alpine plant ecology.
 William C. Edwards - Plant ecology of the willow flats.
 Michael Kersten and Warren Schimpff - A vegetative study of Point Island.

LIBRARY

Periodicals previously subscribed were continued but no new ones added. Current periodicals were made available to the research workers before being filed in the stacks. We continue to receive reprints from research workers of previous years. The total number of the titles of published data resulting from work at the Station is now well in excess of 100. Current National Park Service and Forest Service publications and information are made available to investigators. Reports on research projects, Annual Reports and other information related to the Station operation are made available. A list of the reprints of publications which we have available on research conducted at the Station is included as an appendix to this Report.

VISIT BY A COMMITTEE OF THE NATIONAL ACADEMY OF SCIENCES

Research Station personnel met with an advisory committee to the National Park Service on Research. This was a committee of the National Academy of Sciences which agreed to make a study of national parks and make recommendations concerning research needs and opportunities in national parks. The committee consisted of the following members:

William J. Robbins, Chairman
 C. J. S. Durham, Executive Secretary
 Edward A. Ackerman
 Marston Bates
 Stanley A. Cain
 F. Fraser Darling
 John M. Fogg, Jr.

Tom Gill
 Joseph M. Gillson
 E. Raymond Hall
 Carl L. Hubbs

The Director of the Station as well as other personnel emphasized to this committee the importance of the operation of independent research agencies in Grand Teton National Park. The University of Wyoming in cooperation with the New York Zoological Society represents one of these agencies which can through cooperative projects make valuable contributions to problems of significance to Grand Teton National Park and also provide opportunities for research investigators to pursue projects of general biological significance, and to provide opportunities for young research workers to gain valuable information on procedures and methods of research investigation. A report by this committee has been completed and is now available through the National Park Service.

A VISIT BY A COMMITTEE OF THE NATIONAL SCIENCE FOUNDATION

A committee of the National Science Foundation consisting of Dr. M. Dale Arvey, Special Assistant Biological and Medical Sciences Division; Dr. Frank Richardson, zoologist; and Dr. Lewis E. Anderson, botanist, visited the Station July 13-17. This visit was made to determine the nature of research activities at the Station and no doubt was of importance in determining the extent to which the National Science Foundation will be willing to finance investigators who make application for funds for research projects. The committee members visited with all the research workers, were taken on field trips, and were briefed completely not only on current operations but on the plans for development at the Station. An automobile was made available for use by members of the committee, and the Station entertained them socially. Because of the short term lease which the Station now has with the National Park Service, this committee, as has been true with previous committees visiting the Station, was not too optimistic about the possibility of obtaining National Science Foundation funds for buildings and general improvement of facilities. The committee was extremely enthusiastic about the quality of work being done by the Station and the tremendous opportunities for future development. They assured us that they would cooperate in every way possible to help further the Research Station objectives. It is hoped that a long term lease can be obtained with the Park Service so that federal funds can be more fully utilized for the improvement of the Research Station.

COOPERATION WITH OTHER AGENCIES AND INDIVIDUALS

Cooperation with Grand Teton National Park continued to be a very pleasant and profitable relationship. Much of the credit for this must go to Superintendent Fred Fagergren, Chief Naturalist Willard Dilley, and Park Biologist Glen Cole. Forest Service personnel, principally Robert Casebeer, biologist, contributed effectively to the Station operations.

Cooperation with Grand Teton National Park was continued in line with general agreement arrived at during the preceding year. A summary, prepared by Mr. Dilley in 1962, of the points on which the Research Station and Grand Teton National Park personnel were on general agreement are as follows.

1. Need for permanency to be attained by an agreement for no less than twenty years.
 - (a) The fiscal department of the University of Wyoming is of the opinion that the type of buildings used at the Research Station cannot be amortized in a period less than twenty years. New building construction could not be authorized for a shorter period.
 - (b) A long term agreement makes planning of the operations of the Research Station less difficult. Various contracts can be entered into by the University without the shadow of termination affecting the agreement.
 - (c) A long term agreement creates a more favorable situation when grants for research are sought from various foundations.
2. The staff of the Research Station believes that the present location is satisfactory and ideal in many respects. Geographically it is centrally located to most of the field work which researchers engage in. Pack horses and saddle horses can be obtained nearby. It is not too inaccessible for use during the winter season. Occasionally some projects require field work during the winter. Dr. Clarke and Dr. Diem felt that it would be very difficult to convince the Directors of the University of the justification for a move to another location.
3. Extent of facilities at the Research Station. The Director of the Research Station plans to keep the Station at about its present size. If a long term agreement is forthcoming, they plan to remove one bunk house and build a library-seminar building of about the same size. They would expect to replace all tents, trailers, etc., with adequate quarters. Any construction would be in the nature of upgrading their present facilities.
4. Pasturage for horses is not essential or even desirable. It is considered more economical to rent saddle and pack animals, with the outfitter furnishing all needed equipment.
5. It was felt that it would be desirable to state in any agreement, a few matters of policy as to the nature of research performed and the objectives of the Research Station. Most of the ideas discussed have been a policy of the Station as far as practice is concerned, but they were matters which had not been put in writing.
 - (a) The primary objective of the operation is to perform research which has local application or research which can best be done here because of some unique feature of this area. This statement is not intended to confine research to the exact and artificial boundaries in the park.
 - (b) All applicants who apply for permission to work from the Station facilities will be treated equally, giving no regard to the school or other institution with which they might be affiliated.

- (c) To avoid continuous use of the Station quarters and facilities by any one researcher to the exclusion of other qualified persons, projects are approved for no more than three years. In instances where a project is not completed within the three year period, the investigator may apply for an extension of one year. The board of directors may review the petition and decide if an extension is justified.

The following is a list of research projects in which the Research Station cooperated with the Grand Teton National Park.

1. Some aspects of plant and animal distribution as affected by geologic formations - Kenneth L. Diem and Garth S. Kennington.
2. Ecological investigations at Holly Lake, Teton Mountains - John Merkle.
3. Study of ecology and physiology of moose - Douglas Houston.
4. Study of plant ecology in Grand Teton National Park - John Rumely.

The Wyoming Game and Fish Department cooperated in the continuation of a study by Mr. Ralph Dimmick on the ecology and breeding behavior of the Canada goose.

Both the Park Service and the Game and Fish Department provided the necessary permits for collecting necessary to the pursuit of all research projects.

Personnel of the Biological Research Station, as in past years, were utilized for advice and consultation on problems as requested by the Park Service, other agencies and individuals. Many scientists of national and international repute were visitors at the Station during the summer of 1963. Among these were foreign visitors who were interested in the operation of national parks in this country as well as biological research stations. A list of the visitors to the Station during the summer is too large to include in this report.

As in all previous summers since the Research Station has been administered by the University of Wyoming, the New York Zoological Society has cooperated effectively. Dr. Fairfield Osborn, President of the New York Zoological Society, and Mr. William Conway, Director of the New York Zoological Park, should be mentioned specifically for their cooperation.

STUDENT TRAINING PROGRAM

The Research Station continues to provide opportunities for training of young research workers. The following were given opportunity for this training during the summer of 1963.

1. Michael Kersten and Warren Schimpff - under the Student Conservation Program supported by the National Park Service and Olympic Natural History Association. These students did a research project under the supervision of Mr. William C. Edwards on the ecology of the willow flats area. They were also provided with the opportunity to become acquainted with all research projects underway at the Station as well as to observe the operation of Grand Teton National Park, Yellowstone National Park, the U.S. Reclamation Service, The Federal Fish Hatchery, U.S. Fish and Wildlife Refuge, U.S. Geological Survey, Wyoming State Range Survey and other activities.

2. Steve Martin, who served as assistant to Dr. Margaret Altmann on the study of communication among wild ungulates.

3. Ralph Dimmick continued his research for a Ph.D. degree on the study of Canada geese in the area.

4. Daniel Smith, assistant to Dr. Gerald Scherba on a study of the ecology of ants on Moose Island.

5. Joseph Choi, assistant to Dr. Glenn A. Noble on study of stress factors in relation to parasitism in Uinta ground squirrels.

6. Webster Jones working on his graduate research project on a study of forty big game and livestock exclosures in Northwestern Wyoming.

7. Allen Young assisted Dr. Owen Asplund and Dr. Alan A. Beetle on a taxonomic study by chemical differentiation of the genus Artemisia.

8. Douglas Houston doing research on moose ecology and physiology for the Ph.D. degree.

In addition graduate students from the University of Wyoming and other institutions stopped by the Station for short visits to observe some of the research activities being carried on this summer. We feel that the Research Station is providing a worthwhile opportunity for training of young biological investigators.

FINANCIAL REPORT
1962-1963
October 16, 1962 - June 30, 1963

<u>Item</u>	<u>Budgeted</u>	<u>Expended</u>	<u>Carried Over To Next Year's Budget</u>
Part-time Assistants	\$ 200.00	\$ 200.00	\$
Equipment	874.84	406.15	468.69
Supplies	766.46	163.84	602.62
Contractual	1,422.39	159.90	1,262.49
Travel	226.56	115.56	110.96
Fixed Charges	36.00	36.00	
Extraordinary Expense	53.66		53.66
	<u>\$3,579.91</u>	<u>\$1,081.45</u>	<u>\$2,498.42</u>

July 1, 1963 - October 31, 1963

<u>Item</u>	<u>Budgeted*</u>	<u>Expended</u>	<u>Unexpended</u>
Research Projects	\$ 966.00	\$ 966.00	\$
Part-time Assistants	1,600.00	1,400.00	200.00
Equipment	1,168.69	547.13	621.56
Supplies	1,322.62	752.57	570.05
Contractual	2,505.49	445.25	2,060.24
Travel	365.96	136.00	229.96
Fixed Charges	132.00		132.00
Extraordinary Expense	128.66	76.12	52.54
	<u>\$8,189.42</u>	<u>\$4,323.07</u>	<u>\$3,866.35</u>

*Includes money carried over from previous year, therefore, does not indicate amounts appropriated for one year.

Rent received in the amount of \$963.00 was placed in the General Fund of the University.

The New York Zoological Society contributed \$500 toward the Director's salary in the form of an honorarium.

Grants-in-aid in the amount of \$1800.00 were given by the New York Zoological Society.

Grand Teton National Park grant (Merkle) - \$1200.

National Science Foundation Research Grant (Noble) - \$4,465.20.

Student Conservation Program - \$575.55

Financial support to other projects has been indicated at the conclusion of summaries appearing in this Report.