

28 November, 1983

Mr. Edwin W. Snider, Secretary
Committee for Research and Exploration
National Geographic Society
Washington, D.C. 20036

Dear Mr. Snider:

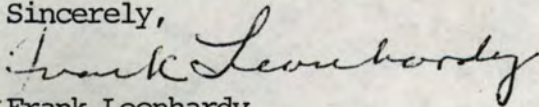
Enclosed is a research grant application entitled "Archaeology in the River of No Return Wilderness Area, Idaho," which I submit for consideration by the Research and Exploration Committee. The application has been approved by the appropriate University of Idaho officials. The usual indirect costs have been waived so that the budget will conform to National Geographic Society policy. If approved, the grant will fund research which is a cooperative project between the Wilderness Research Center and the Laboratory of Anthropology at the University of Idaho.

There is a rather lengthy working document called "Settlement-subsistence in the River of No Return Wilderness: Developing a Model for Prehistoric Survival" which contains the background information for the project. I intend that this application should stand by itself, but should the committee require additional information I would be pleased to forward a copy of the manuscript.

The research will require special use permits from the Forest Service. Application for those permits will accompany a copy of the application sent to Mr. Joe Gallagher of the Forest Service. The Society will be informed when the permits are issued.

Thank you for your interest and kind assistance.

Sincerely,



Frank Leonhardy
Associate Professor

CC:

Dr. Roderick Sprague
Dr. Ed Krumpe ✓
Dr. Arthur Gittens
Mr. Joe Gallagher

('80)

Name of Applicant: LEONHARDY, Frank C.
Last First Middle

Laboratory of Anthropology, University of Idaho, Moscow, ID, 83843
Address and telephone number (including area code)

(208) 885-6735; (208) 885-6123; (208) 885-6751

Date: 22 NOV 1983

Return to:
Committee for Research and Exploration
National Geographic Society
17th and M Streets, N.W.
Washington, D. C. 20036

Applications must be typewritten within the margins on one side of page only with heavily inked ribbon. The application must be limited to these seven pages. If additional materials are essential to a full understanding of the project, they may be attached and will be kept in the office of the Committee Secretary where they may be consulted by Committee members.

1. Project title (ten words or less): Archaeology in the River of No Return Wilderness Area, Idaho

a. Under what major field of science do you classify this project? Archaeology

b. Funds requested from National Geographic Society (U.S.A. currency) \$ 28,428

c. Expected duration of the project. (Specify dates of field and laboratory study). Field work from 8 June, 1983 to 7 August, 1983; Laboratory work from 1 September 1984 to 31 May, 1984.
Supplemental field work will be conducted between 7 August and 31 August by the principal investigator.

d. Location of field work The River of No Return Wilderness Area of Central Idaho, USA

e. Abstract of Proposed Research.

Archaeological research in the River of No Return Wilderness Area is intended to determine how prehistoric people adapted to this mountainous environment. Settlement subsistence theory provides the basis for understanding the interrelationships between resources, technology, and people. Present evidence suggests a fine-grained adaptation specific to this mountain habitat. Work will entail quantification of the resource base beginning with plant foods, locating the archaeological sites associated with the resources and, through excavation, determining the artifact assemblages used by prehistoric peoples through time. Because this environment is minimally disturbed the opportunity for quantifying the native resource base is good, thus enhancing the application of archaeological theory. An additional objective of the research is to provide a basis for comparing the use of this area by different cultures, modern and prehistoric. The 1984 season will be the third year of a long term project by the University of Idaho investigating the prehistory of the wilderness area.

f. Significance of Research. The research will provide information about presently very poorly known prehistoric peoples who occupied the mountainous regions of central Idaho; it will provide a well controlled application of contemporary settlement-subsistence theory; and it will provide a basis for comparing prehistoric and modern use of what is now a recreational area.

Name of Applicant: LEONHARDY, Frank C.

2. Biographical information and qualifications of the applicant:
(In addition, please attach curriculum vitae for committee files)

a. Present position (institution and rank): Associate Professor of Anthropology
The University of Idaho

b. Place and date of birth: Carbondale, Colorado, USA
8 June, 1935

c. Education and degrees with institutions and dates:
BA--Anthropology with French minor, 1959, University of Oregon, Eugene
MA--Anthropology, 1961, University of Oregon, Eugene
PhD--Anthropology with Botany minor, 1970, Washington State University, Pullman

d. Special qualifications of applicant for proposed research (experience, languages, etc.):

Frank Leonhardy has participated in and directed archaeological and geological research throughout the western United States for 25 years. His research interests include ethnography as well as prehistory.

If others are to participate in this project, please give the same biographical information and qualifications for each person in the space below:

The Nez Perce Tribe and the Shoshone-Bannock Tribe will be asked to provide consultants to the project. Who these people may be is not yet known, but American Indian experts on hunting and fishing will be consulted and will be compensated with appropriate honoraria. To understand Indian adaptations to the environment we are dealing with, we must understand something of the Indian perception of that environment. Those to be employed to do field work and laboratory work will be students at the University of Idaho.

Name of Applicant:

3. Books and papers published by the applicant and others who will participate in the proposed research. (A statement such as the following is satisfactory: I have published _____ books and _____ articles (give number), but only the following are on topics directly related to the proposed research.) (Please attach complete bibliography for committee files.)

The following publications are relevant to qualifications for this research; other works are included in the curriculum vitae

- 1966 (Editor and contributor), Domebo: A Paleo-Indian mammoth kill in the prairie plains. Contributions of the Museum of the Great Plains, No. 1.
- 1966 Test excavations in the Mangum Reservoir area of Southwestern Oklahoma. Contributions of the Museum of the Great Plains, No. 2.
- 1967 The archaeology of a late prehistoric village in Northwestern California. Bulletin Number 4 of the Museum of Natural History, University of Oregon.
- 1968 An opinion on archaeological interpretation in the plateau. In The Western Archaic (Cynthia Irwin-Williams, ed.). Eastern New Mexico University Contributions in Anthropology, Vol. 4, No. 1.
- 1970 (with David G. Rice) A proposed culture typology for the Lower Snake River region, southeastern Washington. Northwest Anthropological Research Notes, Vol. 4, No. 1.
- 1971 (with Gerald F. Schroedl, Judith Ann Bense, and Seth Beckerman) Wexpusnime (45GA61): Preliminary Report. Reports of Investigations, No. 49. Laboratory of Anthropology, Washington State University.
- 1975 (with William H. Adams and Linda P. Gaw) Archaeological excavations at Silcott, Washington: the data inventory. Reports of Investigations, No. 53. Laboratory of Anthropology, Washington State University.
- 1981 (with Bruce D. Cochran) Geochronology of the Stockhoff basalt quarry and the Marshmeadow and Ladd Canyon archaeological sites. In Archaeological excavation In the Blue Mountains, Vol. 3, Part 1. Western Cultural Resource Management, Inc. Boulder, Colorado.
- 1982 (with Bruce Cochran) Holocene geology, geomorphology and stratigraphy of the LAURD project area. In Kootenai canyon archaeology (Tom E. Roll, ed.) Montana State University.

4. Method of publication of scientific results of proposed study: Papers in regional journals such as Northwest Anthropological Research Notes and the monograph series published by the Laboratory of Anthropology at the University of Idaho. Some data might be suitable for publications in other disciplines.

Name of Applicant: LEONHARDY, Frank C.

5. Budget

a. Total budget for the project: \$28,428

If funds have been requested from other sources, attach budgets. Contributions from investigator's home institution should be listed under Item 6.

b. Amount requested from National Geographic in U.S.A. currency: \$28,428

c. Budget for funds requested from National Geographic Society. Please specify: e.g., equipment, assistants, field work, travel, services, supplies, etc. The Committee requires that budget items be given with precision and in detail. Two columns may be used. Include on pages 6-7 justification for any items that are not clear. (IMPORTANT: No charge for overhead is allowed. If any capital items are purchased with Society funds, the items or their salvage value are to be returned to the Society upon completion of the project.)

Wages, field work: 2240 hrs @ \$5/hr	\$11,200	
Wages, laboratory: 1230 hrs @ \$5/hr	6,150	
Benefits @ 8%	1,388	
Consultants honoraria	1,000	
	Subtotal	\$19,738
Aircraft charter, 25hr @ \$130/hr	3,250	
Radiocarbon dates 4 @ \$150	600	
Obsidian hydration dates 20 @ \$30	600	
Food \$5 person/day/56days	2,240	
15 tanks propane fuel @ \$40 tank	600	
	Subtotal	7,290
Color film and processing	310	
BW film and processing	100	
Mosquito proof tents	370	
Stationer's supplies	300	
Pack mule maintenance	200	
Air photos	120	
	Subtotal	1,400
	Total Amount Requested	\$28,428

d. Person or institution (with address) to whom payment should be made:

Gerald R. Reynolds, Controller
University of Idaho, Moscow ID 83843

e. Schedule of payments desired:

Quarterly

Before the application is considered, the Society must be informed that all necessary permits for field work (collecting or excavating) and laboratory, museum, or library study have been obtained; and that if foreign travel is involved, the participants have valid passports and required visas.

Name of Applicant: LEONHARDY, Frank C.

6. Amount and nature of institutional or other contributions toward this work. (If you are receiving no aid on this project from a university or other organization, or other individual, please explain):

Support by the University of Idaho includes research facilities of the Laboratory of Anthropology and the Wilderness Research Center. The Taylor Ranch Research Station is available to the project without cost. On campus facilities are provided by the Laboratory of Anthropology.

A request for waiver of indirect costs as a university contribution has been made. This would amount to \$6,822.72, 24% of the amount requested from the society.

7. Previous grants (date, source and amount) received for this work, grants now available, or applications to other organizations which are now pending. State whether they are alternative to your request to the Society. If another request for a grant is made after this proposal is sent to the Society, please notify the Society at once.

Previous grants:

University of Idaho Research Council Grant	\$2,500
Idaho State Historical Society Grant	2,500
Forest Service Research Purchase Order	<u>2,000</u>
Total 1983 Research Funds	\$7,000

No other funds are presently available

8. Previous grants from the National Geographic Society for any project. (List project title, date and amount.)

None

9. Names and addresses of at least three individuals competent to pass judgment upon your qualifications and/or your project. (Note: The Society will get in touch with your referees. In addition, the Committee has its own sources of information, and the referees you suggest may or may not be consulted.)

Dr. Kenneth M. Ames
Department of Sociology/Anthropology
Boise State University
Boise ID 83725

Dr. Jerry Wylie, Regional Archaeologist
Intermountain Region
USDA Forest Service
324 25th Street
Ogden, UT 84401

Dr. Roderick Sprague, Director
Laboratory of Anthropology
University of Idaho
Moscow, ID 83843

10. If the grant requested here is approved, the applicant pledges himself to present a preliminary report on the project to the National Geographic Society on October 1, 1984 (give date) and a final formal report suitable for publication in the Society's Research Reports on May 1, 1984 (give date).

Signature: Frank C. Leonhardy

Typed name: Frank C. Leonhardy

Name of Applicant: LEONHARDY, Frank C.

Describe the proposed research in some detail on pages six and seven. Relate what you propose to do to previous and current work on the subject by yourself or others. (Cite references to published work.) Include a description of any special techniques that will be used.

In 1983 the Laboratory of Anthropology and the Wilderness Research Center of the University of Idaho began to study the prehistory of that part of central Idaho called the River of No Return Wilderness Area. Archaeological surveys and test excavations by the Forest Service indicate that sites are abundant and that people have occupied the area for perhaps as long as 7,000 or 8,000 years. Beyond that little is known (Wildeson, 1982). The wilderness is presently used only for recreation. Populations are transient and totally dependent on the outside world for survival. Our purpose is to learn how a permanent population had adapted for survival within their homeland.

The River of No Return Wilderness area is a beautifully rugged environment with diverse plant and animal communities. Food suitable for a human population seems abundant. People with an adaptation capable of adjusting to seasonal resource variation and to long term environmental variation should have survived successfully. The archaeological problem is to determine what that adaptation was and how it worked.

The approach is to develop a settlement-subsistence model for a small sample universe, a model which should be generally applicable to the entire area. (Leonhardy and Thomas, 1983). The theoretical orientation is that of settlement-subsistence theory, especially as developed by Binford (1980) and David H. Thomas (1983). A set of questions guide present research. The questions ask: What are the resources available; When and where are the resources available; Where are the archaeological sites; What is the structure of the archaeological sites; and, What is the relationship between the archaeological sites and the resources? An important research dimension of the wilderness is that the environment is little disturbed by settlement or industry. Present plant communities are the product of normal processes: there has been neither logging nor agriculture. Game populations have been altered to some presently unknown extent by management practices and dam construction on the Snake and Columbia Rivers has dramatically altered anadromous fish populations. Further, exotic species have been introduced into streams and lakes. But, even with these limitations, it should be possible to quantify the native resource base here more accurately than perhaps any other place in North America.

In the summer of 1983 intensive investigation of the small sample universe began. The sample area is about 113 square miles, 8 miles wide and variously 13 to 15 miles long. It extends northward from Big Creek, a major tributary to the famous Middle Fork of the Salmon River. Elevations range from 3,500 feet to 9,000 feet. This sample area should contain within it all the resources used by native peoples. There is a great diversity of resource areas--places where food is to be found. There is a major stream with fisheries and riparian vegetation; there are xeric slopes which produce abundant food plants; and there are forested slopes which are good habitat for elk, deer, and sheep. There are also high mountain meadows and cirque lakes. The 1983 work included geologic reconnaissance, archaeological survey of different habitat types, and excavations at a small village site (10-VY-31).

Results from the first season are promising. Sixty archaeological sites were recorded, including hunting blinds on slopes and ridges, storage pits, sites with housepit depressions, small rockshelters, ephemeral camps, and complex features considered to be sheep traps. The excavations indicate that during the period ca. 500 years ago people lived in small circular houses about 4 meters in diameter.

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They had a weapons system based on the bow and arrow and they utilized both the mano and metate and the mortar and pestle for processing food. Their tools are predominantly made of stone found within the immediate area but some exotic obsidian was imported, probably from the south. The preliminary faunal analysis clearly indicates a dependence on sheep. Only a single deer is represented in the entire bone assemblage. Elk is not represented at all. Food animals also include rabbit, marmot, and fish. Preserved plant remains are bracts from an unidentified conifer.

We do not yet have certain conclusions, but we do have some strong impressions and insights. It appears that logistically oriented hunter-gatherers were centered along the major stream where there is the greatest diversity of food throughout most of the year. Major logistical moves seem to have been upstream and downstream rather than out of the canyon. If this is so, it contrasts markedly to the general pattern in surrounding regions where seasonal transhumance was out of the canyons at "right angles" to the rivers. Only small sites, presumably special purpose hunting stations, were found at high elevations. This apparent pattern of site distribution may well represent strong physiographic control over resource distribution and consequent human settlement within this mountainous habitat.

The present plan for the 1984 season is to continue and expand the work which was started in 1983. There are 5 objectives for the forthcoming season's work:

1. To quantify food plant resources within the sample area. This will entail identifying the food plants, mapping their distribution, and sampling to determine the amount of food available from any one kind of plant in any one place.
2. To begin formal definition of sampling strata based on the conjunction of topography and vegetation and to continue archaeological survey within the strata.
3. To excavate a high altitude hunting station and to investigate in detail those features considered to be sheep traps.
4. To expand the sample of data from the small village site 10-VY-31.
5. To continue the geologic reconnaissance to define the physical environment in which prehistoric peoples lived and to learn of changes in the environment through time.

Archaeological research in the wilderness must, of necessity, be long term research. Logistics severely limit the amount of work which can be done in one season. Supplies must be flown in and transported from airstrip to camp either by back pack or pack animal. A great deal of time is expended just staying comfortable. Consequently overall data recovery is low. That necessitates more time. Based on the 1983 experience a crew of 8 people will work 8 weeks on all five of the stated objectives. By the end of the 1984 season there should be sufficient data to begin formulating and testing a settlement-subsistence model for the River of No Return Wilderness Area.

References:

Binford, Lewis R, 1980. Willow smoke and dog's tails: hunter-gatherer settlement systems and archaeological site formation. *American Antiquity*, Vol 45, pp4-20.

Leonhardy, Frank and Fred Thomas, 1983. Settlement-subsistence in the River of No Return Wilderness: developing a model for prehistoric survival. MS, Laboratory of Anthropology, University of Idaho.

Thomas, David H, 1983. The archaeology of Monitor Valley: I Epistemology. *Anthro. Papers American Museum of Natural History*, Vol 58, part 1 ppl-194.

Wildeson, Leslie E. 1982. The farthest frontier of all: a cultural resource overview of the River of No Return Wilderness, Idaho. Culture Resource Report 8, USDA Forest Service, Intermountain Region.