

ORGAN PIPE CACTUS NATIONAL MONUMENT
ROUTE 1, BOX 100
AJ0, ARIZONA 85321

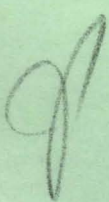
N-22

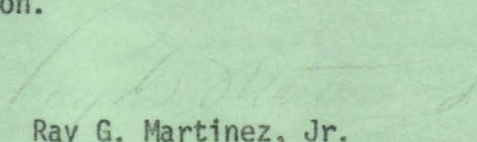
October 18, 1978

Memorandum

To: Acting Unit Leader, Cooperative Resources Studies Unit
From: Superintendent, Organ Pipe Cactus N.M.
Subject: Identify Management Needs, ORPI Bat Survey

The following specific information is needed from the bat study proposed by a portion of the overall fauna survey which you have indicated might be funded by your office. You may wish to add to the list but the two pressing needs are namely the wildlife water problem and the Copper Mtn. tunnels as addressed herein.

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1. Identify locations of resident bat colonies and the relative abundance of each species. Study should include past as well as present and projected population trends. Identify any threatened or endangered bat species.
 2. Identify migrating bat species giving approximate range, location of roosts, habitat requirements and forage requirements including water needs. Park managers require data concerning specific watering habits i.e. the maximum distance they can be expected to travel for water and what size and configuration of water sources (springs, troughs, seeps) are utilized.
 3. Identify any special habitat or foraging requirements including preference for major biotic communities.
 4. Make management recommendations consistent with NPS policies. Submit recommendations for gating the entrances to specific problem areas such as the Copper Mtn. mine tunnels which must be closed to human access for safety reasons.
 5. Update Monument collection.


Ray G. Martinez, Jr.

PETERS:gs 10/19/78

ORGAN PIPE CACTUS NATIONAL MONUMENT
ROUTE 1, BOX 100
AJ0, ARIZONA 85321

N22

September 18, 1978

Memorandum

To: Acting Unit Leader, Cooperative Resources Studies Unit
Through: General Superintendent, SOAR
From: Superintendent, Organ Pipe Cactus National Monument
Subject: Request for Special Study, Bat Survey

As a result of two recent problems we recognize the immediate need for a bat survey. As you know we are seeking methods to reduce the cost of wildlife water hauls to sites without windmills at which we are maintaining water. One solution considered was to construct covers for the tanks/troughs to reduce evaporation losses; however, it is evident that this practice would likely interfere with the watering habits of certain bats. We need to know, for instance, which bat species are involved and how far they are able to travel to obtain the water they need.

Secondly, a recent memo from WRO instructs park superintendents with caves containing bat populations to close them to public access due to the potential hazard they present in the form of air-borne rabies infection. The Copper Mtn. Mine shafts/tunnels do contain bat colonies and should be closed to comply with this memo. Before they can be gated it is necessary to first identify all of the bat species present throughout the various seasons of the year. Little work has been accomplished to date on the bats of Organ Pipe, consequently species suspected to occur here have not been documented.

Entrances to the tunnels should not be closed (obstructed in any way) until our complete bat fauna have been identified and a cave gating expert consulted concerning the appropriate structural design for the gates in question. This survey would constitute a phase of the fauna survey identified in Organ Pipe's Resources Management Plan. (refer to 10-237 ORPI program increase numbers 030 and 032).

Ray G. Martinez, Jr.

Peters
cc: SOAR
Chief Scientist

ORGAN PIPE CACTUS NATIONAL MONUMENT
ROUTE 1, BOX 100
AJ0, ARIZONA 85321

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N-2219 *g*

November 29, 1978

Memorandum

To: Unit Leader, Cooperative National Park Resources
Studies Unit, University of Arizona

From: Superintendent, Organ Pipe Cactus N.M.

Subject: Research Proposal, Bat Survey

I have reviewed the research proposal for the bat survey proposed for Organ Pipe. It appears that this proposal will provide needed answers to the specific bat related problems we are confronted with. I have nothing to add to the proposal as it is written.

Ray G. Martinez, Jr.

cc:

Ray G. Martinez Jr.

Regional Chief Scientist, WRO
Gen'l. Supt., SOAR

PETERS:gs 11/29/78



IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE

Cooperative National Park Resources Studies Unit
125 Biological Sciences (East) Bldg. 43
University of Arizona
Tucson, Arizona 85721

November 13, 1978

RECEIVED	
Organ Pipe Cactus, N. M.	
NOV 15 1978	
1	SUPERINTENDENT
2	AD. M. TION
3	CH. M. TION
	CH. INTERPRETATION
	RESEARCH MANAGEMENT
	PARK TECH
	PARK TECH
	SUPT. SECRETARY
	FILE

Memorandum

To: Superintendent, Organ Pipe Cactus National Monument

From: Acting Leader, Cooperative National Park Resources
Studies Unit, University of Arizona

Subject: Research proposal, bat survey

Enclosed for your information and comment is a proposal for a survey of bat populations and habitats at Organ Pipe Cactus National Monument submitted by Dr. E. L. Cockrum.

The proposal is designed to satisfy specific management needs as identified in your October 19 memo on the subject. I will proceed with preparation of the purchase order as soon as I have received your concurrence on the proposal.

W F Steenbergh

W. F. Steenbergh

cc:
Regional Chief Scientist, Western Region w/enc.
General Superintendent, Southern Arizona Group w/enc.



file

Natural Science Research Proposal

To

U.S. National Park Service

From

Department of Ecology and Evolutionary Biology
University of Arizona, Tucson, 85721

Date of Proposal: 9 Nov 1978

Project Title: Survey of bat populations and habitats at Organ
Pipe Cactus National Monument

Proposed Starting Date: 1 Jan 1979

Expected Duration: 20 months

NPS Funding Requested:

First year	\$ 2560
Second year	\$ 940
Total	\$ 3500

Principal Investigator: E. Lendell Cockrum, Head, Department of
Ecology and Evolutionary Biology, University of Arizona, Tucson,
85721 Telephone (602) 626-1303

(Signed) *E. Lendell Cockrum*

Principal Investigator

- C. from monthly sampling of representative day roosts and watering sites (by utilizing mist nets, hand nets, and other non-destructive techniques)
- 1) seasonal patterns of activity and use will be indicated.
 - 2) distances from day roosts to watering sites as well as specific and seasonal water requirement differences will be estimated.
 - 3) evaluate types of openings necessary to permit mine tunnels to be used as day roosts.

II. Prepare separate reports on (a) water sources used by bats on Organ Pipe Cactus National Monument (size, permanence, species using, etc.) and (b) mine tunnels used as day roosts.

III. Provide for the park manager a non-technical summary report of findings, and management recommendations, especially as to water sources and mine tunnels used as day roosts, based on findings presented in items I and II above.

IV. Provide additional preserved specimens to update the monument mammal collection.

8. Budget.

	1 Jan-30 Sept 1979	1 Oct 1979- 31 Aug 1980
Salaries and Wages		
Field Assistants (parttime)	\$ 1200	\$ 300
manuscript typist		100
Supplies and Services		
Expendable (mist nets, flashlight batteries, etc.)	80	20
Travel		
Monthly trips to area for data collecting plus preliminary trip(s) and trip for final oral presentation.		
Mileage -	800	400
per diem		
(60 mandays at average of \$10 per day)	480	120
Total	2560	940
Grand total	\$3500	

The University of Arizona will costshare on this project in accordance with the Master Memorandum of Agreement between the National Park Service and the University of Arizona dated August 16, 1973 providing for the establishment of a Cooperative National Park Resources Studies Unit at the University of Arizona.

9. Reports. The principal investigator will submit biannual reports on March 15 and September 15 containing a quantitative statement of progress on the project during the preceeding 6-month period.

The principal investigator will also submit, on December 15 of each year an annual progress report containing information required for the Superintendent's Annual Research Report.

A final draft report suitable for reproduction will be submitted not later than 20 months after issuance of the contract. The principle investigator will provide the contracting officer's representative, not later than 2 months prior to the final report due-date, a draft of the report for review and approval for preparation of the final report.

At the conclusion of the project, the investigator will provide a brief on-site presentation to the park staff summarizing the results of the study and its relevance to the park management program.

10. Literature. Almost nothing has been written so far about the bats of the Organ Pipe Cactus National Monument. Several general works will be consulted including:

Hall, E.R. and K.R. Kelson.

1959. The Mammals of North America. Ronald Press -
2 volumes.

Cockrum, E.L.

1960. The Recent Mammals of Arizona. University of
Arizona Press, pp. viii + 276.

Huey, L.M.

1942. A vertebrate faunal survey of the Organ Pipe cactus
National Monument, Arizona Trans. San Diego Soc. Nat. Hist.
9(32):353-376.

Mearns, E.A.

1907. Mammals of the Mexican Boundary of the United States.
Bull. U. S. Nat. Museum, 56:XV + 530.

1. Title. Survey of bat populations and habitats at Organ Pipe Cactus National Monument.
2. Investigator. E. Lendell Cockrum and selected part-time assistants
3. Duration of Project. 20 months
4. Statement of Problem. A comprehensive survey and evaluation of bat populations and habitats of the monument together with information on the ecology of this species present is needed to provide a basis for resources management as well as for interpretive programs. Specific information on water utilization, i.e., species using existing water resources, watering requirements and behavior, is needed to guide decisions on design and maintenance of water developments. Information on use of mine tunnels by bats is needed to assist in the design of gates to restrict human entry without adversely affecting use by bats.
5. Literature Review. A synoptic review of relevant work will be included in the annotated checklist indicated below as part of the work to be performed.
6. Objectives.
 1. Provide an annotated checklist of bat species of the monument.
 2. Evaluate and provide management recommendations on water sources and utilization by bats, and gating of entrances to mine tunnels used as day roosts.
 3. Provide additional preserved specimens to update the monument mammal collection.
7. Work to be Performed. To accomplish the above objectives the following will be accomplished:
 - I. An annotated checklist of the bats of the Organ Pipe Cactus National Monument will be compiled. Entries for each species will provide:
 - A. from existing records, literature review and on-site surveys,
 - 1) currently recognized scientific and common name;
 - 2) brief indication of total range;
 - 3) brief review (based on literature) of autecology of the species (food, reproduction, longevity, seasonal habits, etc.);
 - 4) indication of relative abundance and rare or endangered species status;
 - 5) summary of past records of bats at the Organ Pipe Cactus National Monument;
 - B. from results of field investigations conducted at the Organ Pipe Cactus National Monument,
 - 1) identification and descriptive classification of primary roosting and watering sites;

N-2219



THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA 85721

COLLEGE OF LIBERAL ARTS
DEPARTMENT OF ECOLOGY &
EVOLUTIONARY BIOLOGY

August 8, 1979

M E M O R A N D U M

TO : Terry Peters, Resources Management Specialist, OPCNM
FROM : E. Lendell Cockrum *ELC*
SUBJECT : The bat study at OPCNM

Yesterday afternoon Mr. Scoti Steenberg told me that you were in his office and suggested that we might wish to discuss the above ongoing contract. I called the campus number two or three times, getting a busy signal. I walked down. Lupi Hendrickson was on the telephone and the inner door was closed. After some minutes of not being recognized, I returned to my office. Some five minutes later Mrs. Hendrickson called and asked if she could be of aid. I told her of Scoti's remarks and said that I would be available in my office as soon as you were free. You could either call and I would come there or vice versa. Lupi indicated that she would give you the message.

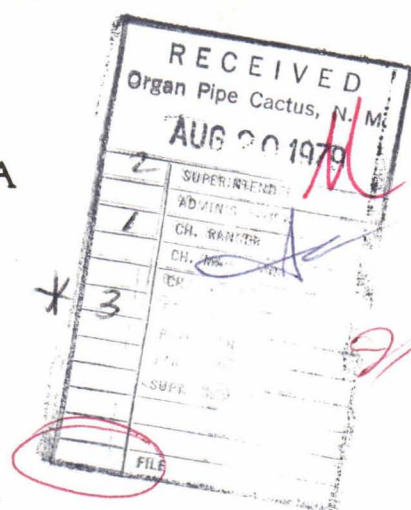
At 5:00 PM I walked down to Scoti's office. The door was locked! The lights were out!

Mr. Steenberg has told me of the negative image the bat study personnel have been creating with you. Perhaps two recent memos from me to past and future assistants may help eliminate most of your criticisms.

However, I do know that some of the people have made repetitive calls on Thursdays or Fridays, trying unsuccessfully to get a connection via the Arizona instate WATS line to OPCNM headquarters. I have had similar experiences. (I have, on three occasions, tried to identify myself to the person on duty at the desk at headquarters and ask concerning the availability of you or the Monument Director -- to no avail. However, I am asking that future assistants try harder!)

cc: Mr. Scoti Steenberg
Assistant Director, NPCRU

*Let's talk to our people
on this RGM*





IN REPLY REFER TO:

N-22

United States Department of the Interior

NATIONAL PARK SERVICE

Cooperative National Park Resources Studies Unit
125 Biological Sciences (East)
University of Arizona
Tucson, Arizona 85721

April 5, 1979

RECEIVED	
Organ Pipe Cactus, N. M.	
APR 6 1979	
1	SUPERINTENDENT
2	ADMIN. ASST.
3	CH. RANGER
	CH. M. SERVICE
	CH. IN. SERV.
	RECORDS
	PARK PLAN.
	ARCH. TECH.
	SUPV. SECRETARY
	FILE

Memorandum

To: Superintendent, Organ Pipe Cactus National Monument
Attention: Terry Peters

From: Acting Leader, CPSU/UA

Subject: Progress report, bat survey

Enclosed for your information is a preliminary copy of the progress report on the bat survey by Dr. E. Lendell Cockrum. The report includes, as you requested, a list of species encountered thus far.

W. F. Steenbergh

Enclosure



Contribution Number CPSU/UA 015/01

COOPERATIVE NATIONAL PARK RESOURCES STUDIES UNIT
University of Arizona, Tucson
March 31, 1979

RECEIVED	
Organ Pipe Cactus, N. M.	
APR 6 1979	
SUPERINTENDENT	
ADMINISTRATION	
CH. RANGER	
CH. MAINTENANCE	
CH. INTERPRETER	
RESOURCE MANAGEMENT	
PARK TECH	
WORK TECH	
SUPV. SECRETARY	
FILE	

PROJECT: Bat populations and habitats at Organ Pipe Cactus National Monument

INVESTIGATOR: Dr. E. Lendell Cockrum

CONTRACT NUMBER: PX8100 9 0050

STARTING DATE: 1 January 1979

ANTICIPATED TERMINATION DATE: 30 June 1980

- OBJECTIVES:
1. Provide an annotated checklist of bat species of the Monument.
 2. Evaluate and provide management recommendations on water sources and utilization by bats, and gating of entrances to mine tunnels used as day roosts.
 3. Provide additional preserved specimens to update the Monument collection.

PROGRESS: To date, five site visits have been made to the area, two devoted primarily to explorations of mine tunnels as potential day roosts and three to mist netting over water tanks to determine seasonal activity and species present.

Preliminary checklist of bats at Organ Pipe Cactus National Monument.

A. Species already recorded

Family Phyllostomatidae

1. Macrotus californicus [= Macrotus waterhousi, part, of some authors]. Probably resident throughout the year. Recorded February and March (this study) plus March (UA banding records), April (OPCNM record), June (OPCNM record) and August (OPCNM).
2. Leptonycteris sanborni [Leptonycteris nivalis, part, of some authors]. Probably present May through September. Recorded June and September (OPCNM records).

Family Vespertilionidae

3. Myotis californicus. California myotis. Probably present February - November. Recorded February (OPCNM), March (Huey, 1942), June (OPCNN) and July (in Cockrum, 1960).
4. Myotis velifer. Cave myotis. Probably present May - October. Recorded July (OPCNM).
5. Pipistrellus hesperus. Western pipistrelle. Probably at least males present throughout the year. Recorded January (USNM in Cockrum, 1960), February (LACM, MV2 in Cockrum, 1960), March (UM in Cockrum, 1960), April (SDSNH in Cockrum, 1960), June (OPCNM) and November (Huey, 1942).
6. Eptesicus fuscus. Big Brown Bat. Probably March - October. Recorded March (this study), July (USBS in Cockrum, 1960).
7. Antrozous pallidus. Pallid Bat. Probably present throughout the year. Recorded March (this study).

Family Molossidae

8. Tadarida brasiliensis. [= Tadarida mexicana, part, of authors]. Guano Bat. Probably present as migratory forms in spring and fall. Recorded April (Huey, 1942).

B. Species possibly present

In the following list are those species that are considered to be probably present during at least part of the year in the Organ Pipe Cactus National Monument. Note that some are considered to be, essentially, transients and may well not be detected during this study. As is generally recognized, bats are nocturnal in activity (thus are rarely seen) and generally highly secretive in day-roost selection (thus are again rarely seen). In addition, for various reasons, there is an

"outside chance" that a few other species may be recorded from the Organ Pipe Cactus National Monument. These species will be indicated in the final report -- if they are not, by chance, captured before that time.

Family Vespertilionidae

1. Myotis yumanensis. Yman myotis. (summer)
2. Myotis lucifugus. Little brown bat (spring-fall)
3. Lasiurus borealis. Red bat. (winter)
4. Lasiurus cinereus. Hoary bat. (winter)
5. Lasiurus ega. Yellow bat. (summer)
6. Euderma maculata. Spotted bat. (any time)
7. Tadarida femerosacca. Pocketed free-tailed Bat. (summer)
8. Tadarida molossa. Big free-tailed Bat. (May-October)
9. Eumops underwoodi. Underwood's Bat. (May-October)
10. Eumops perotis. Mastiff Bat. (May-October)

Notes. The Corynorhinus rafinesquii [= Plecotus townsendi?] recorded in the OPCNM records as having been taken in July 1945 in Alamo Canyon is probably a misidentification.

PLANS FOR NEXT PERIOD: Field and library work will be continued.

Submitted by:

2 Lindell Cockrum