



# United States Department of the Interior

## NATIONAL PARK SERVICE

SOUTHWEST REGION

P.O. Box 728

Santa Fe, New Mexico 87501

IN REPLY REFER TO:

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Informational

Memorandum

To: Southwest Region Superintendents  
From: Regional Director, Southwest Region  
Subject: Resource Manager Training

All of us have recognized and I am sure totally agreed with the emphasis that Director Everhardt has placed on the need for preservation of our resources. We have also felt the frustration due to lack of adequate manpower and funding to accomplish this work to the degree of satisfaction we desire.

Ro Wauer has come up with an idea which I think has great merit, particularly in view of the limitations we face. I am enclosing a copy of the proposed Resource Management Guidelines, together with an outline of Activities. Also enclosed is a copy of Ro's memorandum to me which in essence lays out the methods by which the training would be accomplished.

I suspect that many of you may want to become involved in this program. If not now, certainly as the program develops. I would encourage you to do so if you can accomplish this within the resources available to you.

Enclosures



76-1062

UNITED STATES GOVERNMENT

# Memorandum

TO : Regional Director, Southwest Region

DATE: October 15, 1976

FROM : Chief, Division of Natural Resources Management, Southwest Region

SUBJECT: Program for Resource Manager Training

National Park Service Director Gary Everhart has stated that the preservation of the natural and cultural resources of the National Park System should be our number one objective.

In assessing the quality of the resources management program within the Southwest Region, it is obvious that we have not been able to place the desired emphasis on resources management in recent years. In the meantime, our natural and cultural resources continue to be impacted and decrease in value.

In the Southwest Region, only three areas possess a resources manager or scientist on their staffs: Big Bend, Big Thicket, and Carlsbad Caverns-Guadalupe Mountains--and the latter position is vacant. I suggest that as many as 12 Southwest Region areas may need the services of a capable resource manager.

So, what can be done about it?

The schism between science and management must be bridged. We have tried it for decades, experimenting with a wide variety of ideas. Recently, this office has utilized seminars, symposia, documents of recommendations, and other means of communication.

But I believe that missing link is an effective working agent between the two that relates both to science and management, a body that can talk to both scientists and managers. We have seen some examples when an interested park employee, usually on his own time, works with the scientists; the data becomes known earlier and is made more useful through osmosis at the park level, and the final research report becomes automatically a document that includes the management point of view. This happens only through an awareness at all levels.

So, assuming that a human body can serve as that missing link, he can best function at the park level, where the research and management activities exist. The Regional scientists and resource management specialists can try to fill that gap, but it would take a multitude of saints fully aware of all the disciplines and fully aware of every phase of management and interpretation within every park to make it work.



So, let's consider developing capable Resource Managers at the park level. Although there are a few good ones around, the need is for more and smarter ones. What steps must be taken to achieve our goal?

Initially, I developed a list of activities so that we all are talking about the same kinds of projects, so that we all start at the same place and go in the same direction. We must first recognize that this list of activities represents a legitimate resource management program that should be carried out within areas of the National Park System. We must then do something about making our managers aware of that program, the activities included, and the need for the program as part of their area of operations.

We must train individuals so that they become effective, and that the position of Resource Manager receives acceptance and recognition. We must direct our efforts in these regards with the goal of establishing Resource Managers at the park so that the field areas are able to coordinate all of these activities with only minimal assistance from the Regional Office.

#### A Resource Management Training Program in the Southwest Region

We first asked for a permanent position for use in this activity. Since such a position was not available, we are taking a different approach. We will use a permanent training position at a nearby park--Bandelier--and hire another part-time employee to fill in behind that full-time employee who will serve as our initial trainee. The trainee--John Lissoway--already has completed one year as a ranger trainee, and has requested that his training direction be shifted toward resource management. John has a degree in forestry and has worked in the field for several years.

I began the design of this program with initial discussions with the trainee and Superintendent John Hunter. That was followed by a meeting at the Regional Office to establish parameters to the program. Attendance at this meeting included Regional Director Joe Rumburg and Deputy Regional Director Ted Thompson; Associate Regional Directors Monte Fitch and Wayne Cone; Management Consultant Bob Bendt; Personnel Chief Jose Cisneros; Ron Ice of Cultural Resources; and Natural Resources Management personnel Hank La Sala, Milford Fletcher, Keith Yarborough, myself (Ro Wauer); and Bandelier Superintendent John Hunter and Trainee John Lissoway.

The following decisions were made:

1. Bandelier National Monument will revise John Lissoway's training goals and objectives.
2. The Southwest Regional Office will make money available to pay John Lissoway's salary and travel so that Bandelier can hire a less-than-full-time employee to fill in behind the trainee during this assignment.
3. The period of training will start on November 8, 1976.

4. The trainee's initial assignment will be to develop a curriculum. This will be accomplished in the following manner:

a. Determine the major components of the program using the guidelines attached.

b. Prepare a lesson plan for each component in conjunction with the individual responsible for that specific activity. Activity coordinators will include the following individuals: Fletcher, La Sala, Ice, Yarborough, Wauer, and Charles Budge.

c. Upon completion of the component lesson plans that explain in detail how each activity will be developed, an Overview Committee will evaluate those plans and approve a curriculum. The Overview Committee will include Cone, Bendt, Hunter, and Jim Coleman, and myself. The final curriculum will determine the length of the training, and a general format will then evolve.

d. Lesson plans will vary in length and scope, and will include inhouse and outhouse activities. They may include special assignments at universities, other agencies, and parks, and courses that may be available from a wide spectrum of institutions.

5. An Evaluations Committee will be utilized for each component in the following manner: Each lesson plan will be under the direction of the most appropriate individual, but two or three other individuals will also participate in the seminars, consultation sessions, evaluations of written materials, and evaluation of the training component itself. This technique will provide for more input and more productive sessions.

Example: The following is an example of one component as I presently visualize it operating:

The Resources Management Plan component will begin with an initial discussion between the trainee and Resources Management Plan Coordinator Fletcher. That session will be followed by a seminar on the subject with that component committee and other interested individuals. The trainee will then be expected to review approved plans and to evaluate their strengths and weaknesses in accordance with earlier discussions. This process will probably take two or three days. He should also be reviewing the Bandelier Resources Management Plan and developing a strategy for revising same. On the fourth or fifth day, he should coordinate an in-park seminar of the plan for revision of that document through a joint park area evaluation exercise.

The committee of Fletcher, Hunter, Wauer, Evans and La Sala will be available to discuss any part of this program. That committee will evaluate the trainee, component lesson plan, and accomplishments, such as the revised Bandelier Resources Management Plan.

Although the Resources Management Plan component will be a principal activity for one week or ten days, it will also reflect upon all other activities as the training program develops and progresses. Other components may rely on this one, and Implementation Plans that evolve from other components become part of the overview document.

In a sense, it is the Resources Management Plan component that serves as continuity to the whole training program and reflects upon every other component.

6. I have discussed this proposal with Jim Coleman, Albright Training Center, and Jim is very supportive and interested in the program and wants to participate in the overview session. He suggested that Tom Thomas also may want to participate. I fully accept this valuable assistance and will try to coordinate that session around a time that Coleman and Thomas can attend; December 13 or 14 seems to be an appropriate time.
7. Also at Albright, I talked about this program with the trainees and was asked by several of the trainees about possible participation. As discussed with Superintendent Mintzmyer of Buffalo River, I informed the trainees that we will send out copies of the curriculum within the Southwest Region after it has been developed, and that areas with interested people may want to participate in selective components of the program.
8. Coleman and I talked about the need for training of current Resources Management Specialists, and decided that the best route for this training would be to wait for that final curriculum and determine how Albright can provide a course for "backlog" Resource Managers.
9. The long-range goals of the program are to develop more knowledgeable resources management personnel and at the same time, experiment with the best and most effective methods of reaching that goal. It is intended to develop a Resources Manager for Bandelier National Monument who will remain in that position for several years. That can only be accomplished by the incentive of promotion, and that must be built in to part of the program. One of the goals of this training is to make him eligible for GS-9. And with experience as a GS-9 Resource Manager apprentice, he should be eligible for GS-11 Resource Manager at the end of two years of field experience. The importance of the position at Bandelier should provide that opportunity at Bandelier where he can utilize the mass of knowledge learned on site and assimilated through the initial program.



Roland H. Wauer

RESOURCE MANAGER TRAINING PROGRAM

For John Lissoway

Training Park: Bandelier National Monument

Time: January 4 - September 24, 1977

## OVERVIEW

This Resource Manager Training Program was developed in response to recognized needs as discussed in my October 15, 1976, Memorandum to Regional Director Rumburg and his subsequent, November 2, 1976, approval.

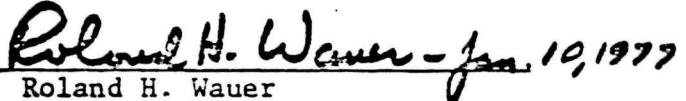
The program is experimental in nature. It is a prototype for a more highly developed program for training of Resource Managers for pre-selected field assignments. It is my hope that this program is the first of several that will be developed by the Southwest Region, Division of Natural Resources Management.

This initial effort required the consent and support of Bandelier Superintendent John Hunter, who recognized its significance and was willing to spend his time and energy on its behalf. It was Bandelier that provided the first trainee, John Lissoway. Funds for salary and travel will be provided from the Southwest Region.

The development of an initial curriculum, including the considerable necessary communications, was the trainee's first assignment. Component drafts were reviewed and approved by an Overview Committee. That committee includes:

Robert Bendt, Park Evaluations, Southwest Region  
Wayne Cone, Associate Regional Director, Professional Services, SWR  
John Hunter, Superintendent, Bandelier National Monument  
Ed Ortega, Training Officer, SWR  
Ro Wauer, Chief, Division of Natural Resources Management, SWR

Component revisions and development of projected costs and schedules followed. The 24 components constitute the curriculum for the program.

  
Roland H. Wauer

### PROGRAM TIME AND COMPONENT SCHEDULE

Total time for the Program is the sum of the 24 components plus an additional 10% that includes field area needs, leave, etc. Components and time requirements follow:

1. Resources Management Plans	8 days
2. Exotic Animal Management	5
3. Landmarks Program	1
4. Environmental Concerns Committee	1
5. Hazardous Plant Control	2
6. Hazardous Animal Control	3
7. RBI/Ecosystem Map	5
8. Landscape Rehabilitation/Restoration	2
9. Threatened and Endangered Species	20
10. MAB and Research Natural Areas	3
11. Water Resources Use and Protection	19
12. Biocide Use	1
13. Research and Implementation	3
14. Radon Monitoring Program	1
15. Cave Management	1
16. Backcountry Use Management	29
17. Fire Management	20
18. Fish Management	6
19. Wildlife Management	10
20. Cultural Resources Site Management	9
21. Agreements with Other Agencies	2
22. Insect and Disease Control	5
23. Exotic Plant Management	6
24. Vegetation Monitoring	<u>10</u>
	172 days

## COMPONENTS

The 24 components of the Resource Management Training Curriculum identifies the specific training and field experiences developed for John Lissoway. The program is designed to prepare Mr. Lissoway for a staff position in Resources Management at Bandelier National Monument.

### Development of Components

This program was designed primarily by the trainee through numerous contacts with key Regional Office staff members possessing expertise in particular subjects. The specialists subsequently became the Component Coordinators. Component Committees were developed of individuals with interest and willingness to participate in the programs. The primary role of the committees will be to evaluate the component products and effectiveness.

Eight of the components are "secondary" in character, and serve as trainee orientation only, requiring no formal evaluation.

The component format was designed to be specific but brief. Objectives (I) serve to guide the trainee in terms of the component goals and expectations upon completion of the component. Background, Materials and Content (II) identify the trainee's prior experience and education in the subject, and lists essential reading, interviews, etc. Activities (III) are the heart of the component and outlines the workload to be completed. Component Evaluation (IV) addresses the committee's review phase and the product to be evaluated.

A total of 172 days will be scheduled within the period of January 4 and September 24, 1977. Component numbers do not suggest component priorities, but were placed in their order because of their relationships with one another, current programs at Bandelier, and seasonal influences. Secondary components often were fit between primary components. It must also be understood that this curriculum was designed for Bandelier National Monument, and does not necessarily reflect needs for other areas.

## SCHEDULE

A schedule of components follows for January, February, and March only. The character of the curriculum suggests that a schedule beyond March should be developed after the first experimental months.

JANUARY 1977

<u>Component</u>	<u>Beginning Date</u>	<u>No. of days</u>
1. Resources Management Plans	January 4	3 (1st Phase)
2. Exotic Animal Management	January 4	5
3. Landmarks Program	January 17	1
4. Environmental Concerns Committee	January 18	1
5. Hazardous Plant Control	January 20	2
6. Hazardous Animal Control	January 20	<u>3</u>
		15 days

Formal Training: Water Fundamentals Course; January 10-14  
Superintendents' Conference: January 26-28

Evaluation Period: during week of February 7

FEBRUARY 1977

<u>Component</u>	<u>Beginning Date</u>	<u>No. of days</u>
Evaluation of Components 1 - 6	Week of February 7	1
7. RBI/Ecosystem Map	February 10	5
8. Landscape Rehabilitation/ Restoration	February 14	2
9. Threatened and Endangered Species	February 23	<u>20</u>
		28 days

Formal Training: Safety for Line Managers; February 28-March 4 (no cost)

Evaluation Period: during week of March 14

MARCH 1977

<u>Component</u>	<u>Beginning Date</u>	<u>No. of days</u>
10. MAB and Research Natural Areas	March 15	3
11. Water Resources Use & Protection	March 21	19
12. Biocide Use	March 22	<u>1</u>
		23 days

Formal Training: MAB Committee Meeting; March 31-April 1

Evaluation Period: during week of April 11

### Clarification

Beginning dates have been designated above, but ending dates cannot be determined because components will overlap, and in a few cases, run throughout the entire curriculum. Evaluations will be made on the components as they are completed. Committee members will be contacted several days prior to each evaluation session. It is extremely important that Component Coordinators set aside appropriate Beginning Dates.

### TRAINING COURSE COST ESTIMATES

Jan 10-14, 1977	Water and Wastewater (Fundamental Course) Boulder, CO	Per diem 6 da @ \$40.00 Reg Fee	\$240.00 45.00	
				\$285.00
Mar 31-Apr 1, 1977	MAB Regional Coordina- tion Committee Tucson, AZ	TVL: (Ross)	96.00 (Alb to Tucson) 48.00 (LA to Alb)	
				144.00
		Per diem 4 da @ \$35.00		140.00
				284.00
Aug 22-26, 1977	Ecol Ftrs Resource Management, TBA	TVL: (Ross)	? 48.00 (LA to Alb)	
				48.00
		Per diem 7 da @ \$35.00		245.00
				293.00
3 days (Open)	Chaco Center Field Research (285 mi fr BAND)	TVL: GSA \$3 da plus .06 mi)	25.00 34.20	
				59.20
		Per diem 5 da @ \$35.00		175.00
				234.20
1 week (Open)	Backcountry Management, Rocky Mountain NP (60 mi - Denver)	TVL: (Ross)	96.00 (Alb to Denver) 48.00 (LA to Alb)	
				144.00
		Rental 7 da @ \$15.00		105.00
		Per diem 7 da @ \$35.00		245.00
				494.00

2 weeks  
(Open)

Backcountry Use Management,  
Texas A&M Univ, College Sta.  
Texas (100 mi - Austin)

TVL: 144.00 (Alb to Austin  
(Ross) 48.00 (LA to Alb)  
192.00

Rental  
10 da @  
\$15.00 150.00

Per diem  
10 da @  
\$35.00 350.00  
692.00

Total ...\$2,282.2

Training Component: RESOURCE MANAGEMENT PLANS

Coordinator: Fletcher

Committee: Hunter, Wauer, Fletcher, Evans, Budge, Ice,  
La Sala

I. Objectives.

- A. Phase I: Trainee orientation to processes of resource management planning.
- B. Phase II: Strategy development and revision of Bandelier RMP.
- C. Component evaluation (completion of Phase II).

II. Background, Materials and Content.

- A. Trainee background: Limited involvement with park implementation planning.
- B. Reading assignment:
  - 1. National Park Service Policy Statements, Resource Management.
  - 2. Executive Order 11-593.
  - 3. NEPA.
  - 4. Bandelier Statement for Management, Master Plan, Resource Management Plan, associated environmental reviews.

III. Activities, Phase I.

- A. Interview with Coordinator Fletcher on:
  - 1. Initial development, required information, format, legal constraints, personnel involved in the planning process.
  - 2. Strengths and weaknesses of existing RMP's; discussion of specific area plans.

- B. Overview seminar with committee, to discuss resource, management planning and plans in general; specific interdisciplinary involvement; need for input; interface of research and management, etc.
- C. Coordinate park staff review session.
  - 1. Conduct staff briefing on need for total involvement and interdisciplinary approach to planning.
  - 2. Record pertinent inputs, ideas and discussion.

#### IV. Activities, Phase II.

- A. RMP revision strategy development.
  - 1. Review and assemble all significant inputs with area Supt.
  - 2. Prepare written summary of overall strategy for plan revision.
- B. Prepare plan revision for review.

#### V. Component Evaluation.

- A. Committee/trainee session.
  - 1. Trainee overview briefing to committee covering:
    - a. RMP revision and strategy developed.
    - b. If objectives were met, possible component revisions, etc.
- B. Overall program assessment.

Total time: Phase I, 3 days; Phase II, 5 days.

#### Administrative notes:

- (1) Time element for component may vary due to interview and meeting scheduling, etc.
- (2) Trainee will complete formal evaluation form for SWRO training officer.
- (3) Phase I activities will be completed at start of training program; Phase II completed at end of program.

Training Component: EXOTIC ANIMAL MANAGEMENT

Coordinator: Hunter

Committee: Hunter, Fletcher, Wauer, Bendt

I. Objectives.

- A. Trainee orientation to National Park Service and area policies and programs involved with feral animal management.
- B. Coordination with Bandelier Superintendent on implementation of area Feral Burro Management program.
- C. Component evaluation.

II. Background, Materials and Content.

- A. Trainee background: Conducted two orientation talks to local groups on subject of burro management problems at Bandelier; field assistance to burro researchers totaling approximately two months; attendance of one interagency discussion session on burro management.
- B. Reading assignment:
  - 1. National Park Service Management Policies: exotic animals.
  - 2. Intensive review of park central files Animals (mammals, N1427) and Burro Management (N16).
  - 3. Environmental Assessment for Feral Burro Management (Nov. 1976).
  - 4. Completed burro research papers.
  - 5. Correspondence on burro management from Death Valley NM, Grand Canyon NP.
  - 6. "Exotic Animals of North America."
  - 7. Reading package on activist conservation groups (assigned by Hunter).
  - 8. U.S. Fish & Wildlife, other NPS, State Game & Fish, BLM and USFS policy publications as assigned.
- C. Interview with Superintendent and Chief Ranger on burro management strategies and present status (i.e., assessment, public workshop, review process, etc.).

### III. Activities.

#### A. Coordinate with area Superintendent on:

1. Obtaining necessary photographs, maps, materials, and equipment to be used in conducting Burro Assessment workshop (public).
2. Develop and coordinate the meeting room layout (map placement, charts, and photo mountings with pertinent descriptions, etc.).
3. Assistance during workshop.

#### B. Assist Superintendent with development and implementation of the assessment review process:

1. Assemble necessary data from correspondence and public review.
2. Assist with selection of alternative and/or followup actions.

#### C. Develop final management strategy (with Superintendent and staff) as derived from above activities: draft section revision of RMP; coordinate initial field activities as planned.

#### D. Attend Bighorn Conference (T.B.A.).

### IV. Component Evaluation.

#### A. Committee/trainee session, covering trainee performance and the draft burro management implementation plan section.

#### B. Revise component as per committee/trainee concensus.

Total Time: 5 days.

Administrative notes:

Time element will vary according to correspondence and workloads, etc.

Training Component (secondary): NATURAL AND HISTORICAL LANDMARKS PROGRAM

Coordinators: Yarborough, Twyman

Committee:

I. Objectives.

- A. Basic Orientation to the history, development, and current status of the Natural Landmarks Program.
- B. Orientation to Historical Landmarks Program.

II. Background, Materials & Content.

- A. Trainee background: none.
- B. Reading: NPS Management Policies (Chapter 1-12), and reading evolving from interviews with component coordinators.

III. Activities.

- A. Interview with Yarborough (Natural Landmarks Program Coordinator, SWRO) on significance of program and current status.
- B. Interview with M. Twyman (Historical Landmarks Program Coordinator, SWRO) on development and current status of program.

IV. Component evaluation: None.

Total time: 1 day

Administrative notes:

Training Component: ENVIRONMENTAL CONCERNS COMMITTEE

Coordinator: Hunter

Committee: Wauer, Evans, Division Chief's (Bandelier)

I. Objective: To coordinate activities leading toward the development of a park level committee to involve the staff in area environmental problems.

II. Background, Materials and Content.

A. Trainee background: presently Bandelier Safety Officer; National Park Service training and familiarization with environmental education programs; Van Matre's "Acclimatization" concepts (HMATC, 1974); need program.

B. Other preparation - none.

III. Activities.

A. Meet with Superintendent Hunter; discuss park environmental concerns and need for such a committee.

B. Upon Superintendent's initial approval, conduct individual staff member interview session; determine individual interests.

C. Draft preliminary list of committee members. (excluding Superintendent)

D. Conduct committee session to develop preliminary guidelines with Superintendent.

E. Prepare written set of committee guidelines, responsibilities, and goals.

F. Present an Environmental Awareness program at Bandelier that concerns itself with particular issues and concerns that affect the monument. (Burro, pesticides, maintenance activities, waste water treatment, visual and noise pollution, etc.)

IV. Component Evaluation.

- A. Committee review of completed guidelines with trainee.
- B. Recommend any changes as identified.

Total time: 1 day

Administrative notes:

Training Component: HAZARDOUS PLANT CONTROL

Coordinator: Fletcher, La France

Committee: Hunter, Fletcher, Pippenger, La Sala

### I. Objectives.

- A. Trainee familiarization with Service and area policies.
- B. Development of park safety guidelines addressing hazardous plant (and animal) management measures.
- C. Component evaluation.

### II. Background, Materials and Content.

- A. Trainee background: coordination of activities involving hazard tree site protection and treatment in high density visitor use areas; Bandelier Safety Committee Chairman.
- B. Concurrent training: hazardous animal control component.
- C. Reading assignment:
  - 1. Review National Park Service Policy (Chapter IV).
  - 2. Park central file review: Safety and Health (A7615), pertaining to hazard plants and animals park history.
  - 3. Review National Park Service and New Mexico State Safety and Health Standards on subject.

### III. Activities.

- A. Interview with SWRO Safety Engineer (Pippenger), discussing specific field problem cases within Region; evaluate results of actions taken.
- B. Arrange and conduct Park Safety Committee session, formulating an amendment to the existing Safety Plan for Superintendent's review and approval.
- C. Revision page development for Bandelier Resource Management Plan.

IV. Component Evaluation.

A. Committee/trainee session.

1. Committee evaluation of trainee performance, Resource Management Plan page revision, and park safety documents relating to hazardous plant and animal controls.
2. Trainee and committee components critique.

B. Component revision (both primary and secondary).

Total time: 2 days

Administrative notes:

Training Component (secondary): HAZARDOUS ANIMAL CONTROL

Coordinator: Fletcher

Committee: Fletcher, Hunter, Pippenger, Wauer

I. Objectives.

- A. Trainee orientation with Service and local area policies and procedures involved for hazardous animal management.
- B. Component evaluation.

II. Background, Materials and Content.

- A. Trainee background: Bandelier Safety Committee Chairman; venomous snake relocation experience.
- B. Reading Assignment:
  - 1. National Park Service Management Policies (Chapter IV).
  - 2. National Park Service Safety policy: hazardous animal control.
  - 3. Pertinent literature and publications as recommended by New Mexico State Public Health Office and Los Alamos County Public Health Officer.
  - 4. Poisonous Dwellers of the Desert.

III. Activities.

- A. Interview with representative of New Mexico State Public Health Department.
  - 1. To identify trends and specific problem areas in: Rabies control, plague, disease carriers.
  - 2. To learn of current management approaches to above problem areas.
- B. Interview with R. Penny, Los Alamos Public Health Officer, to discuss present and potential problem areas.
- C. Arrange and conduct park safety committee session, to draft Bandelier Safety Plan amendment addressing the recognition and control of hazardous species.

D. Draft a page revision for Bandelier Resource Management Plan.

IV. Component Evaluation.  
(This evaluation to be held in conjunction with hazardous plant control component.)

Total time: 3 days

Administrative notes:

Training Component: RBI/ECOSYSTEM MAP

Coordinator: Wauer

Committee: Wauer, Hunter, Fletcher, Budge, Judge

I. Objective: Background development leading to compilation of RBI file and preparation of an ecosystem map and associated overlays for Bandelier.

II. Background, Materials and Content.

A. Trainee background: Introductory college photogrammetry and mapping.

B. Reading: Selected literature on information base development (Levels I and II); review selected area ecosystems maps for familiarization, significance of RBI's.

III. Activities.

A. Initiate expansion of scale for Bandelier working maps (5":1 mile).

B. Develop information base, Levels I and II for Bandelier ecosystem parameters.

C. Prepare baseline map, overlays as identified; utilize informational base data from research and completed inventories for Bandelier.

IV. Component evaluation of completed maps and procedures.

Total time: 5 days

Administrative notes:

Training Component: LANDSCAPE AND VEGETATION REHABILITATION/  
RESTORATION

Coordinators: Pozel, La France

Committee: Pozel, La France, Hunter, La Sala

I. Objective: Orientation to RMS need for involvement with rehabilitation activities at the park level.

II. Background, Materials, and Content.

A. Trainee background: soils science course work (H.S.U., 1965).

B. Materials review:

1. Bandelier files, Vegetation Rehabilitation.
2. Review current campground rehabilitation proposals, budget estimates with Chief of Maintenance La France.

C. Correspond with L. Wilson (HOSP) regarding landscape program being developed.

III. Activities.

A. Finalize the rehabilitation proposal with La France in coordination with Pozel (SWRO).

B. Prepare final budget estimates with La France for review by SWRO.

IV. Component Evaluation: None.

Total time: 2 days

Administrative notes:

Training Component: THREATENED AND ENDANGERED SPECIES MANAGEMENT

Coordinator: Wauer

Committee: Wauer, Hunter, Fletcher, Wobbenhorst, Hubbard

I. Objectives.

- A. Develop awareness of Service and individual responsibilities involved in managing all restricted species at the park level.
- B. Trainee familiarization with procedural aspects of planning and implementing a habitat management program at Bandelier.
- C. Develop a restricted species list for Bandelier.
- D. Component evaluation.

II. Background, Materials and Content.

- A. Trainee background: None.
- B. Materials and Content.
  - 1. Reading assignment:
    - a. Endangered Species Act, pertinent reports which interpret the Act.
    - b. Selected U.S. Fish and Wildlife Service Recovery Plans and reports.
    - c. National Park Service Management Policies (Chapter IV-IX).
    - d. Essential Habitat Management Plan for BIBE Gambusia fish species.
    - e. Review current cooperative agreements.
  - 2. Interview with J. Woodie, Endangered Species Office, U.S. Fish and Wildlife Service (Albuquerque), covering:
    - a. Status of New Mexico programs.
    - b. Specific recovery plans, development of.
    - c. Evaluation of cooperative agreements.
  - 3. Contact J. Hubbard, New Mexico State Game and Fish Coordinator for endangered species, for overview of State roles relating to National Park Service management activities.

### III. Activities.

- A. Contact U.S. Forest Service (Region III, Albuquerque) Endangered Species Coordinator to discuss the mutual problem of habitat management for the Jemez Mountain Salamander; arrive at preliminary understandings and possible approaches toward management.
- B. Draft for review and comment an Essential Habitat Management Plan for Jemez Salamander.
- C. Contact Hal Mackey, Heritage Program representative for State of New Mexico, on computerization of Endangered Species, and retrieval system design.
  - 1. Coordinate with Wauer on developing informational system for management planning and retrieval for National Park Service use.
  - 2. Participate in a seminar session for assessing above listed activities.
- D. Initiate development of a restricted species list for Bandelier (Contact T. Foxx, BAND VIP).
- E. Prepare for review, guidelines for Peregrine Habitat Management (contact: Hubbard).

### IV. Component Evaluation.

- A. Committee critique of written materials and trainee performance.
- B. Evaluation of component structure and revise as necessary.

Total time: 20 days

Administrative notes:

Training Component (Secondary): MAN AND THE BIOSPHERE. RESEARCH  
NATURAL AREAS

Coordinator: Wauer

Committee: Wauer, Hunter, Yarborough

I. Objective: Orientation to subject programs and possible area applications.

II. Background, Materials, and Content.

A. Trainee background: None.

B. Reading: Research Natural Areas guidelines; IUCN Bulletin.

C. Correspond with WASO Programs Coordinator, Research Natural areas; request pertinent background and programs information.

III. Activities.

A. Assess possible areas at Bandelier for RNA proposal and inclusion into Federal Register; conduct staff seminar to discuss possibilities.

B. Determine criteria for publishing (if area has been selected).

C. Contact U.S. Forest Service to determine mutual interests in RNA Program.

D. \*(See Administrative notes).

IV. Component Evaluation.

(To be held based upon determination of committee and trainee.)

Total time: 3 days

Administrative notes:

\*Tentative: March 31, April 1 - Tucson, AZ, "MAB Regional Coordination Committee"

Training Component: WATER RESOURCES USE AND PROTECTION

Coordinator: Yarborough

Committee: Yarborough, Hunter, Wauer, Fletcher, Moore, Mitchell, PHS

## I. Objectives.

- A. Orientation to management functions relating to aquatic systems in National Park Service.
- B. Development of aquatic systems monitoring program at Bandelier.
- C. Component evaluation and review.

## II. Background, Materials, and Content.

- A. Trainee background: National Park Service water sampling and reporting; basic course, soils science (Humboldt State Univ., 1965); course work in meteorology and Introductory Oceanography (Univ. of Arizona, 1972); course in physical geology, 1960.
- B. Materials and Content.
  - 1. Reading assignment:
    - a. Water-related texts and materials as suggested G. Moore (SWRO Hydrologist), covering laws, policies and pertinent reports.
    - b. Request pertinent correspondence relating to Crater Lake National Park case.
    - c. Memorandum (dated 11/17/76) from Biologist, SWRO, on DDT monitoring at Bandelier.
    - d. Reading as suggested by B. Mitchell, SWRO.
  - 2. Interviews.
    - a. Los Alamos County Public Health Officer (R. Penny): local problems.
    - b. U.S. Forest Service, Tesuque District Ranger, Santa Fe National Forest: snow survey techniques, watershed management program.
    - c. U.S.G.S., Albuquerque (John McLean): Hydrologic survey programs.
    - d. New Mexico State E.I.A. Officer (Santa Fe): Aquatic system monitoring programs, legal aspects, current problem areas.

- e. University of New Mexico, Environmental Health Department: Current research areas, sources of information.
- 3. Arrange staff meeting: Moore, Fletcher, Hunter, Yarborough, La France (Bandelier, Chief of Maintenance).
  - a. Discuss potential and current problem areas relating to water use, rights, pollution, etc.
  - b. Discuss possible monitoring and protection strategies.
- 4. Attend water-wastewater plant operations school (Fundamentals); see Administrative notes.
- 5. Attend an area evaluation of water system (content: Mitchell, SWRO).

### III. Activities.

- A. Plan organization.
  - 1. Summarize priority problem areas (water) for Bandelier.
  - 2. Develop any needed research proposals.
  - 3. Organize water monitoring strategy: water course analysis, snow survey, tests, etc.
- B. Plan development.
  - 1. Prepare (with BAND staff) a water use program to maintain rights in Frijoles Creek, snow survey and stream flow reporting system.
  - 2. Prepare stream water analysis reporting system, identifying necessary types of tests required (i.e., coliforms, temperatures, dissolved O<sub>2</sub>, B.O.D., etc.). Plan long-range monitoring program for Frijoles Creek ecosystem.
- C. Plan implementation.
  - 1. Conduct (with trained USFS or USGS Officer) an onsite snow survey.
  - 2. Acquire necessary testing kits (HACH, etc.) and flow meters.
  - 3. Train personnel as necessary.
  - 4. Onsite evaluation to identify DDT source in Frijoles Creek (with La France).

IV. Component Evaluation.

- A. Committee review of trainee summary of activities and results.
- B. Committee evaluation of trainee performance and component.

Total time: 19 days

Administrative notes:

Arrange interview sessions well in advance.

Wastewater School information:

Fundamentals Course, Boulder, CO., 1/10 - 1/14/77.

Training Component (Secondary): BIOCIDE USE

Coordinator: Fletcher

Committee: Fletcher, Hunter, Wauer, La France

1. Objectives:

- A. Develop an awareness of the need for sound planning, monitoring, and judicious use of chemicals in park operations.
- B. Component evaluation.

II. Background, Materials, and Content.

- A. Trainee background: Course work with lab, Basic College Chemistry.
- B. Concurrent component: Water Resources use and protection.
- C. Reading:
  - 1. Review of WASO 1977 Pesticide Project Proposals and Guidelines (File: Y22).
  - 2. F.I.F.R. "As Amended" (Federal Insecticide and Rodenticide Act).
  - 3. Bandelier central files Y22.

III. Activities.

- A. Arrange session with Bandelier Superintendent and Division Chief's on:
  - 1. Review of current proposals for biocide use at Bandelier (ADP Printouts).
  - 2. Discuss relative merits of each proposal.
  - 3. Seek possible modifications to proposal as written.

IV. Component Evaluation. (Combined with Water Resources and Use Component).

Total time: 1 day

Administrative notes:

Training Component: RESEARCH AND IMPLEMENTATION

Coordinator: Wauer

Committee: Wauer, Hunter, Fletcher, Bendt

- I. Objective: Orientation to relationships between park and regional Office involving aspects of budgeting cycles, contracting at park level, priority development, and program implementation from completed research.

II. Background, Materials, and Content.

- A. Trainee background: Park experience in resource requirements data preparation.
- B. Prerequisite component: Resource Management Plans.
- C. Reading as suggested by Coordinator Wauer.

III. Activities.

- A. Interview session with Coordinator Wauer.
  1. Overview of budget cycle process.
  2. Contracting procedures and legal aspects, park and Regional level.
  3. Regional priority development.
- B. Exercise in research report implementation:
  1. Review completed initial research report on DDT concentrations in portions of Frijoles Creek (ref: Biocide Use, Water Resources Use and Protection Components).
  2. Conduct staff (BAND) seminar of problem; arrive at consensus for action with Superintendent's approval.
  3. Followup responsibilities: Assigning work, supervision, evaluation.
- C. Water resources section revision of area Resource Management Plan based upon completion of above exercise and followup recommendations.

IV. Component Evaluation.

- A. Committee review of performance and RMP revision page.
- B. Component revision as necessary.

Total time: 3 days

Administrative notes:

Training Component (secondary): RADON MONITORING PROGRAM

Coordinator: Yarborough

Committee: None

I. Objective: Development of awareness for need to recognize particular park problem areas requiring specialized approaches to management.

II. Background, Materials, and Content.

A. Trainee background: None.

B. Reading: NPS Radon Information Package.

III. Activities.

A. Interview with Radon Program Coordinator Yarborough.

1. Discuss history and chronology of program development.
2. Discussion of legal implications, NPS responsibilities, policy, and public involvement.

B. With Yarborough, conduct Radon tests at Bandelier.

C. Prepare memorandum to Superintendent Hunter on test results.

IV. (No evaluation).

Total time: 1 day

Administrative notes:

Training Component (Secondary): CAVE MANAGEMENT

Coordinators: Fletcher, Yarborough

Committee: None

- I. Objective: Trainee familiarization with principles and basic aspects of managing caves and similar geologic features.

II. Background, Materials, and Content.

- A. Trainee background: College course work in physical geology.

- B. Reading:

1. National Park Service Management Policies (Chapter IV-19).
2. Program outline for cave inventory, interpretation, and protective management, jointly formulated by USFS, NPS and BLM.
3. Research report, "Earth Cracks of Wupatki NM" by Cave Research Foundation (1976).

III. Activities.

- A. With Coordinator Fletcher, attend a chapter session of the National Speleological Society in Albuquerque; will provide orientation to Society's organization, functions and objectives in cave management.
- B. Interview with Fletcher on current research areas and management problems confronting National Park Service field areas.

- IV. Component Evaluation: None. (Note: This component closely associates with the Radon Monitoring component.)

Total time: 1 day

Administrative notes:

Training Component: BACKCOUNTRY USE MANAGEMENT

Coordinator: Budge

Committee: Budge, Hunter, Wauer, Fletcher, Evans, Mofte  
Cone

## I. Objectives.

- A. Development of the need for trainee involvement with people management within National Park Service backcountry and Wilderness areas.
- B. Trainee orientation to techniques of regulating use consistent with applicable National Park Service policies.
- C. Attainment of on-the-job experience with backcountry management planning, development of a monitoring program, media and public relations, evaluating and interpreting use data, and personnel supervision.
- D. Component evaluation.

## II. Background, Materials, and Content.

- A. Trainee background: College course work in basic statistics, sociology, general psychology; National Park Service experience in use permit systems implementation, traffic monitoring devices, seasonal backcountry personnel supervision, backpacking and visitor contact activities, interpretive presentations on and offsite, press releases, and a strong personal affinity toward wilderness values.
- B. Materials and Content.
  - 1. Preparatory readings, discussion, and orientation.
    - a. Review National Park Service management policies: Backcountry Use (Chapter VII).
    - b. Wilderness Act (1964).
    - c. "The Preservation of Natural Diversity" by Nature Conservancy (1975).
    - d. National Park Service Directive 4-75, (Chapters III, VI, and VII).
    - e. "Wilderness Impact Study Report" by Sierra Club (1972).
    - f. "The Carrying Capacity of Wildlands for Recreation" by Wagar (Forest Service Monograph 7, 1964).

- g. Ditton's work on carrying capacity (Amistad), 1976.
  - h. "A Survey and Analysis of Recreational and Livestock Impacts on the Riparian Zone of the Rio Grande in Big Bend National Park"; Texas A & M University Research Paper (1976).
  - i. "Visitor Perception of Wilderness Recreation Carrying Capacity" by Stankey (1973).
  - j. Other pertinent literature reviews as assigned by Component Coordinator Budge, SWRO.
  - k. Fazio's research paper, Backcountry Use Management.
2. Orientation to backcountry use management activities through combined visits to: Rocky Mountain National Park with E. Menning (Resource Management Specialist), covering development of backcountry management to date; USFS Computer Facility, Ft. Collins, CO, covering backcountry permit data processing and overall capabilities.

### III. Activities.

- A. Use assessment.
  1. Data analysis and interpretation techniques.
    - a. Temporary assignment (NTE 2 weeks), Texas A & M University; contact R. Ditton, Recreation and Parks Department, covering:
      - (1) Review of assembled Bandelier backcountry use raw data, photo records, patrol logs, vegetative analysis data, etc.
      - (2) Development of data assessment strategies, relationships of use and impacts, etc.
      - (3) Establish a useable management framework for Bandelier.
  2. Prepare preliminary outline of management approaches for Bandelier's Backcountry Management Plan.
- B. Public relations and media experience.
  1. Contact (through C. Kump, SWRO) P. Ellsworth, applicant for commercial river guide use permit, Rio Grande/Bandelier section.
    - a. Discuss mutual responsibilities, potential problem areas.
    - b. Meet with Superintendent Hunter - advise of relevant information leading to issuance of permit.
  2. Interview with B. Moffett (SWRO Public Affairs Officer) on development of media information service for backcountry users (bi-weekly news column, etc.).

- C. Backcountry management planning.
  - 1. Conduct staff seminar at Bandelier, discussing pertinent information to be addressed in the BMP.
  - 2. Develop a draft Backcountry/Wilderness Management Plan for committee and staff review.
- D. Field project in campsite management.
  - 1. Conduct field survey of a future designated camping zone (Bandelier Upper Frijoles Crossing area).
    - a. Record individual site characteristics and vegetative transect analysis of selected "indicator" sites.
    - b. Initiate site marker requisitions, supervise site preparation.
    - c. Develop individual site carrying capacities, monitoring records, maintenance and rotation schedules, etc.
- E. Supervision.
  - 1. Plan and supervise the development of a backcountry/wilderness ranger handbook for field use.
  - 2. Plan and supervise development of Cochiti District operations manual pertaining to visitor use management.
- F. Formal National Park Service Training: attend "Ecological Factors in Resource Management" course (40 hours), August 22-26, 1977; to offer an overview to this training program, and provide a medium of idea exchanges in resources management.

#### IV. Component Evaluation.

- A. Committee/trainee session, covering:
  - 1. Evaluation of draft Wilderness Management Plan for Bandelier.
  - 2. Evaluation of trainee performance in developing monitoring programs, special use permit issuance, and supervisory effectiveness.
  - 3. Trainee critique of formal training attendance and temporary assignment.
- B. Trainee and committee critique and revision of component (if necessary).

Total time: 29 days

Administrative notes: All travel for orientation and training to be arranged well in advance, formal training in Ecol. Ftrs. Res. Mgt. (Site TBA).

Training Component: FIRE MANAGEMENT

Coordinator: La Sala

Committee: La Sala, Hunter, Wauer, La France, Budge

I. Objectives.

- A. Trainee orientation to interagency fire organization as it applies to a park level resource manager.
- B. Develop trainee awareness to key aspects of fire management: Wildfire prevention and control, fire by prescription, and structural fire.
- C. Elevate trainee fire qualification as per National Park Service directives.
- D. Introduction to the management and operational tools necessary to develop a fire management plan for Bandelier NM.
- E. Component evaluation.

II. Background, Materials, and Content.

- A. Trainee background: Approximately seven seasons fire suppression experience, California Division of Forestry (1959-1966); course work in fire control, Humboldt State University (1965); current Interagency Fire Qualification Card, Crew Boss and Sector Boss trainee.
- B. Materials and Content.
  - 1. Reading:
    - a. National Park Service Fire Management Policies and Guidelines.
    - b. Recently acquired publications, reports, and research texts relating to fire management (fuels, prescription developments, weather, smoke management, tactics, prevention, etc.).
    - c. Pertinent interagency agreements relating to fire management.
  - 2. Tour of USFS Region III, Fire and Aviation Section (Albuquerque):
    - a. Learn of equipment and resources available, dispatching procedures, capabilities, costs, etc.

- b. Overview of new techniques ("Total Mobility Concept", AFFIRMS, FIREBASE, FOCUS, FATCOM, etc.).
- c. Familiarization with multiagency guidelines in fire administration (accounting, planning, justification, expenditure, etc.).

### III. Activities.

#### A. Wildfire Management.

- 1. Prevention - coordinate with Bandelier interpretive division on developing interpretive displays (prevention and fire management program).
- 2. Detection - supervise the planning of an integrated park detection system (lookout procedures, patrolling, public contact activities, etc.).
- 3. Suppression.
  - a. Personnel training: Arrange with D. Halsey (BIFC) to participate in tasking a training program (providing trainee background in design of park level fire training programs).
  - b. Supervise a park mobility activity (fire equipment inventory, control system, purchasing, etc.), in accordance with directives.

#### B. Prescribed fire management.

- 1. Initiate a park prescribed fire committee to coordinate the development of a fire management program. (Note: This is to become a continuing function extending beyond the scope of this training program.).
- 2. Gain experience in prescribed burning techniques from USFS (contact: J. Keller, Santa Fe NF) as opportunities arise.
- 3. Identification of training course needs for fire qualifications:
  - a. To Sector Boss rating - Water/pumps, S211; Air Operations, S370; firing equipment, S215; Fire Organization and Management, S310.
  - b. To Division Boss rating - (to be identified).
- 4. Fire experience gained through fire assignment.
- 5. Fire management planning - coordinate closely with SWRO Resources Management Specialist and park committee in assessing all relevant data, identification of current status of program, and logical steps to complete as per directives; prepare status report to Superintendent.

Training Component: FISH MANAGEMENT

Coordinator: Fletcher

Committee: Fletcher, Wauer, New Mexico Game & Fish Officer

I. Objectives.

- A. Trainee orientation to fisheries management as it applies to NPS field areas.
- B. Strategy development for fish management in Bandelier water courses.
- C. Component evaluation.

II. Background, Materials and Content.

- A. Trainee background: coursework in soil science (Humboldt State University, 1965); (see additional college courses, water resources component of training plan).
- B. Component prerequisite: water resources protection and use component.
- C. Reading assignment:
  - 1. NPS Management Policies (Chapter IV-7&8).
  - 2. Bandelier central files N1423 (Fish Management), for review of:
    - a. Historic reports.
    - b. Research and survey studies.
    - c. Correspondence, re: recommendations and present program status.
  - 3. Related research papers, texts pertaining to Bandelier fish species and habitats as recommended by State Game & Fish Dept. personnel.
- D. Orientation tour, State fisheries research facility (Santa Fe, NM)
  - 1. Interview with Fisheries Research Project Leader (R. Patterson) on techniques of angler use monitoring, stocking level determinations, habitat studies, etc.

2. On-site orientation to research projects in progress, library and reference materials, etc.
3. Contact J. Hubbard (State Game & Fish), arrange for field survey assistance at Bandelier.

### III. Activities.

- A. With New Mexico State Fish Officer, conduct a field sample of stocking in upper Frijoles or Capulin Creeks; discuss related ecological factors (visitor use impacts, fire, precipitation effects, etc.).
- B. Conduct Bandelier staff seminar session, discussing fish management approaches and effects of each.
- C. Review pertinent memorandums of agreement; draft or revise same as needed to update mutual commitments, etc.
- D. As advised by Superintendent, initiate any research proposals or management activities.

### IV. Component Evaluation.

- A. Committee/trainee session.
  1. Trainee presentation of completed activities, written materials, and component critique.
  2. Committee evaluation of trainee performance and component effectiveness.

Total time: 6 days

Administrative notes: (An environmental assessment may be required for an identified Fish Management program.)

Training Component: WILDLIFE MANAGEMENT

Coordinator: Wauer

Committee: Wauer, Hunter, Fletcher

I. Objectives.

- A. Orientation to Service policies, applicable State and Federal cooperative agreements in New Mexico.
- B. Develop field experience in conducting a wildlife species census for Bandelier.
- C. Foster park staff awareness to ecological problems associated with the management of wildlife.
- D. Component evaluation.

II. Background, Materials, and Content.

- A. Trainee background: No formal coursework; National Park Service field experience in wildlife observation and reporting.
- B. Materials and Content.
  - 1. Reading:
    - a. National Park Service Management Policies (Chapter IV-6&8).
    - b. "North American Wildlife Policy", by Wildlife Management Institute, 1973.
    - c. "Wildlife Management Techniques", edited by Giles (3rd ed., 1969).
    - d. "Another Look at Wildlife in the National Park System", by Humphreys (1972).
    - e. Wild Horse and Burro Act and Supreme Court ruling.
  - 2. Interview with J. Johnson, New Mexico Game and Fish Department, discussing mutual agency responsibilities, field monitoring techniques, and specific area problems.

### III. Activities.

- A. With J. Johnson, arrange seminar session with members of SWRO staff and directorate, Bandelier Superintendent, and equivalent level staff of Game and Fish Department.
  - 1. Discuss relationships, cooperative agreement.
  - 2. Evaluate agreement, identify future roles and mutual objectives in wildlife management.
- B. Conduct a field census (pellet transect) for Muledeer and elk species at Bandelier, under general guidance of a State Game and Fish Officer; prepare baseline data system for future monitoring.
- C. Prepare evaluation (narrative) and alternative approaches to the wildlife reporting form to WASO; contact N. Guse, and discuss need for more effective reporting format.
- D. Coordinate with Bandelier Chief, I & VS, on developing strategies to improve the wildlife observation reporting system, and work with staff to improve recording habits.
- E. Contact mammal research scientist D. Guthrie, Clairmont College (California), discuss completed small mammal study and future research work at Bandelier.
- F. Evaluate reintroduction programs and discuss (with staff) potential needs for Bandelier.
- G. Review observation records, files and literature; prepare summary overview for mammals of the Monument.

### IV. Component Evaluation.

- A. Committee session with trainee to evaluate conducted seminar, wildlife reporting form revision, trainee performance overall, etc.
- B. Recommendations for component revision.

Total time: 10 days

Administrative notes:

Training Component: CULTURAL RESOURCES SITE MANAGEMENT

Coordinator: Ice, Battle (SWRO)

Committee: Ice, Hunter, Battle, Wauer, Wobbenhorst, Voll,  
Judge, Lister

### I. Objectives.

- A. Trainee orientation to roles and functions of a resource manager relating to cultural resources within park areas.
- B. Development of sensitivity toward the significance of a historic fabric.
- C. To lay groundwork for a cultural resource oriented research proposal.
- D. Component evaluation.

### II. Background, Materials, and Content.

- A. Trainee background: College coursework in Cultural Anthropology and Physical Anthropology; two years interpretive experience, National Park Service cultural areas.
- B. Materials and Content.
  - 1. Preparatory reading:
    - a. National Park Service Management Policies for cultural areas.
    - b. Sub-task Force Report, Cultural Resource Preservation, Brown (SWRO), 1975.
    - c. Reading as suggested by Cultural Resources Division Staff, SWRO.
  - 2. Interview with R. Ice, and D. Battle, SWRO Cultural Resources, on role of resource management in cultural preservation activities at park level.

### III. Activities.

- A. Interview and orientation session of Chaco Center activities:
  - 1. Tour Chaco Center.
  - 2. On-site visit to Chaco Canyon for understanding of principles employed by an active research unit.
  - 3. Orientation tour, Pecos project.

- B. Conduct strategy session with Superintendent of Bandelier and Cultural Resource Preservation Specialist, D. Battle.
  - 1. Discuss possible approaches to determining visitor use impacts on remote cultural sites at Bandelier.
  - 2. Arrive at a research proposal statement and questions needing attention.
  - 3. Communicate with Southwest Region Arch Lab., J. Judge.
- C. Write a research proposal for review, including budget estimates and description of data required.

IV. Component Evaluation.

- A. Committee/trainee session, discussing research underway and performance.
- B. Discuss relative merits of training as it relates to the resource management function.

Total time: 9 days

Administrative notes: Possible contract preparation, negotiation, etc., to be administered by SWRO staff personnel.

Training Component (Secondary): AGREEMENTS WITH OTHER AGENCIES

Coordinator: Manges

Committee: Manges, Hunter, Wauer, Budge

- I. Objective: Trainee orientation to the interagency agreements process, legal implications and mutual responsibilities.
- II. Background, Materials, and Content.
  - A. Trainee background: None.
  - B. Reading: As suggested by SWRO Solicitor G. Manges.
- III. Activities.
  - A. Interview session with G. Manges; discussing types, legal responsibilities and obligations, and effects of other agency agreements.
  - B. Review all Bandelier agreements with other agencies for relevance, need for update, etc. (Consult with Bandelier Superintendent).
  - C. Under direction of Superintendent and Solicitor, revise those agreements as identified.
- IV. Component evaluation: To be held pending completed revisions deemed significant.

Total time: 2 days

Administrative Notes:

Training Component: INSECT AND DISEASE CONTROL

Coordinator: Fletcher

Committee: Fletcher, Hunter, La Sala

I. Objectives.

- A. Trainee orientation to National Park Service and area policies; other Federal, State, and local sources of expertise.
- B. Develop an on-site awareness of specific problem areas within Bandelier, and recommend appropriate management strategies.
- C. Component evaluation.

II. Background, Materials, and Content.

- A. Trainee background: Basic course work in forest entomology and pathology, Humboldt State University, 1965.
- B. Materials and Content.
  - 1. Preparatory reading:
    - a. Forest Pest Control Act (1946).
    - b. Review current Memorandum of Agreement, USDA and USDI.
    - c. National Park Service Management Policies Chapter IV-10).
    - d. Bandelier files, Insect and Disease (Y22).
    - e. Subscribe to periodical, Center for Insect and Disease Control (Atlanta, GA).

III. Activities.

- A. Orientation tour of Entomology and Pathology Division, Region III, Office of USFS, Albuquerque. Request to be included in next scheduled fly-over of Monument area.

- B. Interview with Mr. P. Martinez, Santa Fe County Agricultural Agent, to discuss mutual interests and problem areas (current infestations, etc.).
- C. Conduct field assessment of Bandelier (including new land acquisitions):
  - 1. Identify major outbreaks by species: Collect samples; conduct general vegetative conditions assessment.
  - 2. Assemble field notes for a written summary to Superintendent.
  - 3. Communicate necessary information compiled to USFS.
- D. Meet with Bandelier Superintendent and SWRO Biologist (Fletcher) to discuss possible management actions as required.
- E. Review files and literature; prepare summary overview for park.

#### IV. Component Evaluation.

- A. Committee/trainee discussion of written materials, performance, and component critique.
- B. Revise component as necessary.

Total time: 5 days

Administrative notes:

Training Component: EXOTIC PLANT MANAGEMENT

Coordinator: La Sala

Committee: La Sala, Hunter, Wauer, Fletcher

I. Objectives.

- A. Trainee familiarization with National Park Service policies and responsibilities in management of exotic plant species.
- B. Develop basic knowledge of species, locations, and ecology of the exotic plants at Bandelier; identify status and management strategies for each.
- C. Component evaluation.

II. Background, Materials, and Content.

- A. Trainee background: (See "vegetative management" component).
- B. Reading assignment:
  - 1. National Park Service Management Policies (Chapter IV).
  - 2. "Plant Communities of Bandelier NM Area", by P. Patraw.
  - 3. "Geology and Ecology of the Pajarito Plateau", by T. Foxx.
  - 4. Completed research and pertinent literature reviews on Tamarisk and Ailanthus species.
- C. Interviews:
  - 1. Coordinator La Sala - discussion of the relationships between the field, Regional Office, and other sources of expertise relating to exotic plant management; review of specific field area cases.
  - 2. Bandelier VIP T. Foxx (Plant ecologist) - discussion of exotic plant development and current specific problem areas at Bandelier. Arrange on-site observational field trip.

### III.. Activities.

- A. Field trip with T. Foxx, covering all known exotics in park, and development of possible eradication/removal strategies, (late spring season for identification.)
- B. Interview with area Superintendent, outlining recommendations for management actions for all known exotic plantlife within park.
- C. Prepare documented action plan for Ailanthus and Tamarisk overview document for management.

### IV. Component Evaluation.

(This evaluation will be held in conjunction with vegetation management component).

Total time: 6 days

Administrative notes:

Training Component (Secondary): VEGETATION MONITORING

Coordinator: La Sala

Committee: La Sala, Hunter, Fletcher, Wauer,

I. Objectives.

- A. Trainee orientation to specific problem areas in vegetative management, and recognition of necessity for interdisciplinary approaches.
- B. Development of working knowledge as to designing and implementing a grazing impact monitoring program at Bandelier.
- C. Component evaluation.

II. Background, Materials, and Content.

- A. Trainee background: Forest management curriculum, Humboldt State University; limited National Park Service experience in conducting vegetative transects and fuels inventory, Bandelier NM.
- B. Component Prerequisite: EXOTIC ANIMAL MANAGEMENT
- C. Reading assignment:
  - 1. National Park Service management policies.
  - 2. Review of flora of Bandelier publications.
  - 3. Review central files (BAND), "Forestry and Range Conservation (Y18).
  - 4. "Soil Survey and Survey of Range and Ecological Conditions on a Southern Part of Bandelier National Monument", by Earth Environmental Consultants (1974).
- D. Interviews with USFS (Santa Fe NF) personnel in Range and Timber Management Sections, covering:
  - 1. Grazing impact studies completed or underway.
  - 2. Successfully proven impact monitoring techniques.
  - 3. On-site tour of USFS Experimental Forest.

- E. Interview with Dr. L. Potter (UNM) on significant research completed relating to associated range conditions in the Bandelier area; discuss University capabilities (library, research facilities, etc.).

### III. Activities.

- A. Grazing impact monitoring.
  - 1. Set up permanent photo stations and vegetative transects at three constructed and one natural animal enclosures.
  - 2. Develop a baseline record system to identify trends over time as Burro herd is being reduced.
- B. Prepare written summary for area Superintendent of above program development, recommending future management strategies, etc.

### IV. Component evaluation: To be combined with EXOTIC ANIMAL MANAGEMENT component.

Total time: 10 days

Administrative notes: The topic of vegetative management will be covered also within the components of FIRE MANAGEMENT, EXOTIC PLANTS, ENDANGERED SPECIES, INSECT AND DISEASE, BACKCOUNTRY USE MANAGEMENT, BIOCIDES USE, and others.