Had this prepared as a guide but was unable to go over most of it with the committee. J.J.C.

TENTATIVE AGENDA

Meeting with the Natural Sciences Advisory Committee
September 6, 1969

Prepared for the Natural Sciences
Advisory Committee Meeting
Mammoth - September 6 - 7, 1969
-- J. and F. Craighead

I. General scope of project - Handout 1
   1. Vital Statistics
   2. Project completion outline
   3. Metcalf - Udall letters

II. Brief review of history of project

   1. Chronological Review - 1959-1967 - Handout 2

      1959 - 1965 Supt. Garrison

      1965 - 1967 Supt. McLaughlin

      1967 - 1969 Supt. Anderson

      Drastic changes in research and management policies

III. Report - Management of Bears in Yellowstone National Park - 1967 - Handout 3

   1. How handled

   2. Park Service's Review - Craighead reply - Handout 4
      Linn - comments on Management Report
      Craighead - comments on Linn memo

   3. Review by scientists
      a. Cottam
      b. F. Bell
      c. L. Gould
      d. L. Yeager

   4. Crux of the present bear-management situation

      Linn document (Cole) became the basis of the NEW management program
      Decisions made by Cole and Anderson
      a. Formulated bear management policies and programs without reference to previous work (time)
      b. Designed research to support and justify the new program.

IV. Threat to the Wildlife Profession and Academic Freedom

   1. Freedom to distribute and publish findings with recognized limitations

   2. Complete disregard of research findings by National Park Service

3. Formulations of management objectives and procedures by inexperienced personnel of N.P.S.

4. Research to justify management decisions - cart before the horse

5. Calculated attempt to destroy our research effort

6. Role of scientists in public affairs

   a. Responsibility to profession
   b. Responsibility to the public

V. Lack of cooperation by present Yellowstone Administration

1. Research - Grizzly Bear

2. Management - Grizzly Bear

3. Unilateral decisions

   a. Problems these pose

4. Harrassment tactics or legitimate problems? (Present administration)

   a. Glacier report - Great Falls Tribune - Handout 5

   b. Housing facilities - lab
      Correspondence and discussions - Handout 6

   c. Visiting scientists
      A.E.C. situation - Handout 6d - 7

   d. Limitations on students

   e. Issue directive of support to district and sub-district ranges

   f. Attempts to discredit project and personnel - Handout 8

   g. Ban on ranger cooperation

   h. One-sided interpretation of memos of agreement

   i. Restrictive contracts - Handout 9

   j. Duplication of data and effort

VI. Publication of Management Report - Handout 10

1. BioScience
2. Endorsement of this Committee
3. Review by Committee prior to publication
4. Professional ethics involved

VII. Examples of mismanagement and negligence

1. 1960 black bear reduction - Yellowstone
2. 1967 Glacier attacks (Olsen - Moment reports)
3. Agency investigating itself
4. Incomplete and misleading reports
5. Nonobjective research - dangers

VIII. Research

1. History of elk migration study - Garrison
2. History of elk radio-tracking

   A.E.C., NASA and Smithsonian Institution

3. Research in sensitive areas
   a. Coyote
   b. Bear
   c. Elk
4. Competition with N.P.S. research effort

   a. Priority - established projects - new projects

   b. Cooperation
      Where does initiative lie?

5. Need for:

   a. Basic long-term research by nonservice personnel
   b. Short term fact-finding projects - N.P.S.
   c. Objective research
   d. A scientist of stature needed in Yellowstone

IX. Dangers inherent in the present bear situation

1. Threat to the resource

2. Threat to lives of visitors

3. Threat to scientific integrity

4. Adverse publicity for National Park Service

5. Discouragement of independent research

X. Problems that must be resolved:

1. What is mission of N.P.S. research effort?

2. Under what conditions will independent research be encouraged?

3. How will N.P.S. research and independent research be coordinated?

4. Will independents research sensitive areas?

5. What restrictions will be placed on the independent researcher with regard to:

   a. Public discussion of work
   b. Distribution of reports
   c. Publication

6. What is the role of a National Park as regards its use as a research lab for scientific community?

   a. Should this use be encouraged or discouraged?
   b. How regulated and supervised?
   c. Housing and travel problems

7. What are N.P.S. responsibilities when it accepts independent research?

   a. Researchers commit funds, time, personnel.
   b. Independent research must be recognized as an integral part of park activities and researchers consulted
   c. Park administration must accept something less of absolute authority.
   d. Unilateral decisions not acceptable.

8. Where does research end and management begin?

9. How can the two be integrated and where does responsibility begin and end?

10. How can the entire N.P.S. personnel system be resource-oriented as well as people-oriented?

11. What responsibility does the Service have to discuss major problems and contemplated changes of programs and policies with:

    a. The general public
    b. Other resource agencies
    c. Special groups
    d. Contract workers - research, etc.

12. What is the role of public hearings? U.S. Forest Service policy

13. Should the authority of new superintendents to alter policy, effect drastic changes, etc., be examined?

14. Are more basic guidelines for managing Yellowstone needed?

    a. Wilderness classification
    b. Wild Rivers classification
    c. Roading
    d. Campground locations and development
    e. Concessionair
    f. Management of migratory game

15. Can the Service be more professionally oriented by establishment of higher Civil Service standards?

BEAR MANAGEMENT DISCUSSION
Natural Sciences Advisory Committee Meeting
September 6-7, 1969

I. Management Objectives and/or Policies - Alternatives

1. Page 3 - Management report - optimum population management

   Manipulate food - control zones

2. Minimum population to reduce possibility of bear-man contacts

   Manipulate population - control kill

3. Ecosystem and tri-state management

   Yellowstone not a self-regulatory ecological unit

   Harvest overflow

4. Should manage to maintain optimum population level of a threatened species.

5. Man must be accepted as an integral part of bear ecology.

II. Major Management Suggestions (Craighead Report)

1. Slow phasing out of dumps with careful study of effects on grizzlies.

2. Close coordination between N.P.S. bear management program and our bear research project. Continued research.

3. Increase in management effort

   a. Personnel

b. Equipment

c. Funds

d. Training

4. Integrated program with surrounding states and U.S. Forest Service

III. Management Theories Invalid - Not Based on Research

1. Back country vs. non - back country bears - False

2. Dumps must be eliminated or discontinued abruptly *

3. Grizzlies naturally regulated in Yellowstone **

4. Elimination of one bear makes room for another ***

5. Other agencies will not assume management responsibilities ****

Home ranges - range data

Map 1

Annual and seasonal movements

Map 2

Territoriality - Social Hierarchy

Map 3

*See Page 3
**See Page 6
***See Page 6
****See Page 7

Movement to kills

Map 4 and Map 5 (Jay)

Back country censuses vs. concentration site censuses

Graph 1 - 2

Probably "no such thing" as back-country grizzly

a. Early history - Lewis and Clark - Indian

b. Storer and Tevis - California grizzly

c. Karluck Lake, Alaska

d. Brooks Range

e. Polar Bear - Churchill

f. Forest Service cabin - Bob Marshall

Proposal to conclusively determine number of grizzlies utilizing back country in August

*2. Dumps must be eliminated abruptly - False

Population and distribution changes under present management policy

1. Grizzly bears observed - 1959-1969

Graphs No. 3, No. 4, No. 5, No. 6

2. Increased campground use by grizzlies

   Graphs No. 7 and No. 8

3. Decrease in Trout Creek population level - increase other areas

   Graph No. 5

Relationship of Marked Grizzlies that visit Campgrounds

1. Grizzlies initially captured and marked in campgrounds and recaptured

   Graph No. 9

2. Grizzlies captured and marked elsewhere and recaptured in campground

   Graph No. 9

3. Marked grizzlies captured in campgrounds - 1968

   Graph No. 10

General Behavior and Movement Patterns of Bears Visiting Campgrounds

1. Itinerant bears - spring and fall

   Maps No. 1 and No. 2

2. Resident bears - home ranges - 202

   Map No. 6

3. Productive females

Graph No. 11

Only 112 visited once and was killed

General Behavior and Movement Patterns of Non-Campground Bears

1. Home ranges #40 and #187

Maps Nos. 7 and 8

2. Centers of Activity #40 - 1968

Map 9

3. Twenty-four hour activity patterns

Graphs No. 12 and No. 13

Comparison of Beahvior and Movement of Campground and Non-Campground Bears

Map No. 10

Availability of Food at Trout Creek

1. 1959-1966 - General discussion

2. 1967 and 1968 - General discussion - Notes

3. 1969 - Table 1

4. Use of Natural Foods - Dependence on dumps

a. Plant

b. Animal

c. Major food categories

d. By seasons

e. Use of radios as for studying food habits of grizzlies

Zoning - in Park

Due to dumps

Concentrate bear during visitor period

**3. Grizzlies are naturally regulated within Yellowstone - False

a. Causes of mortality - Management Report

b. Must be intelligent control inside and outside of park

***4. Elimination of one bear makes room for another - False

a. Biological basis of Social hierarchies

b. Population adjusted by <u>movement</u>

Map No. 1

c. Not necessary to justify control-kill in order to make room for <u>other</u> bears

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d. No scientific evidence of overpopulation of grizzlies in Yellowstone.

****5. Other agencies will not assume management responsibilities - False

a. Letters and correspondence

IV. Basic Biological Data having Management Implication

1. Population size and structure

Management Report - Page 46

2. Reproductive Biology

Graphs No. 11, No. 14, No. 15, and No. 16

3. Mortality Ratio

a. Management report

b. Control kill in Yellowstone

1909-1968 By ten-year Periods

V. Need for Continued Research and an Intensive Management Effort Based on Research - Present Situation

1. Threatened species

2. Increased opportunity for bear-man contact (visitor increase)

3. Yellowstone National Park Administration reaction to our report.

(What are natural ecosystem relationships?)

a. Rejected all major suggestions (Linn's letter)

b. Stepped up campaign to hamstring research effort and force us out of Park

c. Did not substantially increase management effort in Yellowstone

d. Initiated grizzly bear research in both Glacier and Yellowstone with no consultation with our research team.

e. Duplication of effort and confusion of objectives.

f. Refused to cooperate in an integrated effort.

g. Has steadfastly pursued a policy of curtailing our research effort.

SOME VITAL STATISTICS ON GRIZZLY BEAR RESEARCH
in

Yellowstone National Park

1959-1969

Prepared for the Natural Sciences
Advisory Committee to the National
Park Service, September 6 - 7, 1969
-- J. and F. Craighead

GENERAL OBJECTIVES OF THE STUDY

1. To develop and perfect methods and techniques of capturing, handling, marking, and immobilizing grizzly bears.

2. To study the population dynamics of grizzlies and with the aid of marked animals, determine population size, density, sex and age composition, breeding age, reproductive capacity, growth rate, mortality rate, and population turnover.

3. To study population behavior, family composition and activities, breeding behavior, and relationship between various units in the population.

4. To determine home ranges, daily and seasonal movements, and distances traveled to food, to hibernation sites, and for breeding purposes.

5. To determine carrying capacity and habitat requirements and relate these to existing conditions of food abundance, habitat types and hibernation sites.

6. To collaborate with specialists in conducting physiological, hematologic and pathological studies.

7. To adopt and utilize electronic equipment in obtaining ecological data.

8. To prepare a management plan for the grizzly bear in Yellowstone National Park and adjacent areas.

WORK ACCOMPLISHED

Duration of continuous research effort: 11 years

Total months of continuous field research: 61 (5 years, 1 month)

Approximate number of miles hiked by research personnel: 162,000

Total man-days of work on the project (involves all aspects of the field research but not data compilation or laboratory work): 8,742

Census Statistics:

Total number of censuses: 491

Average duration of censuses: 3.5 hours

Total censuses in hours: 17,185

Total man-hours spent censusing grizzlies: 34,370

Total individual grizzlies marked: 256

Total grizzlies handled: 524

Total grizzlies captured in traps: 314

Total grizzlies shot free-roaming with Capchur gun: 210

Radio-tracking statistics:

Number of individual grizzlies instrumented with radios: 23

Number of instrumentations: 48

Number of radio-tracking days (monitored by radio): 1,219
(29,256 hours)

Number of home ranges determined: 12

Number of seasonal ranges determined: 9

Number of winter dens located: 12

Maximum number of consecutive years an individual bear was instrumented: 8

Specimen statistics:

Individual bears preserved as specimens in whole or part: 69

Number of reproductive tracts for histological examination: 65

Blood samples collected for chemical analysis (live bears): 170

Grizzlies aged by tooth sectioning: 87

STUDENTS WHO RECEIVED FIELD RESEARCH TRAINING ON THE PROJECT

Rand Bradley	Univ. of Mont.	Jerry McGahan	Univ. of Mont.
Peter Brider	Univ. of Penn.	Peter McLachlan	Univ. of Mont.
Paul Blomgren	Univ. of Mont.	Jeff Nelson	High school student
James Claar	Univ. of Mont.	Harry Reynolds	Univ. of Mont.
Karen Craighead	Univ. of Mont.	James Romansky	State Univ. of N.Y.
Lance Craighead	Carlton College	Robert Ruff	Univ. of Mont.
Elliott Dalton	High school student	Tim Seasteadt	Univ. of Mont.
Sid Dunkle	Univ. of Wyoming	Donald Seibert	Univ. of Mont.
Richard Ellis	Univ. of Mont.	John Seidensticker	Univ. of Mont.
Edward Holroyd	State Univ. of N.Y.	Mike Stephen	Univ. of Mont.
Maurice Hornocker	Univ. of Mont.	Jay Sumner	Univ. of Mont.
Raphael Jingu	Univ. of Mont.	Henry Tomingas	Univ. of Wyoming
Robert Leedy	Cornell Univ.	James Wiley	Univ. of Wyoming
Henry McCutchen	Univ. of Mont.	Vincent Yannone	Univ. of Montana

COLLABORATION

Professional Colleagues

Dr. Fritz Bell, M.D., Ph.D.
Rocky Mountain Laboratory

Dr. Morgan Berthrong, M.D.
Penrose Hospital, Colorado Springs, Colorado

Dr. Harold Braun, M.D.
Missoula, Montana

Mr. Hoke Franciscus
Electronic Engineer

Dr. Laurence M. Gould
University of Arizona - Former President A.A.A.S.

Mr. Ken Greer
Montana Fish and Game Department

Dr. Robert Jenness
University of Minnesota

Dr. B. W. O'Gara
University of Montana

Dr. E. W. Pfeiffer
University of Montana

Collaboration - Professional Colleagues (Continued)

Dr. O. Stein
University of Montana

Mr. Joel Varney
Electronic Engineer, Philco Corporation

Mr. Wes Woodgerd
Montana Fish and Game Department

Dr. P. L. Wright
University of Montana

PUBLICATIONS

See List of Publications and Pending Publications Resulting from Research in Yellowstone National Park.

FINANCING

Total funding 1959-1969 (approximate): $800,000.00

National Park Service Contribution (approximate): $29,000.00 (3.6% of total cost)

List of contributors:

National Science Foundation
National Geographic Society
Philco Corporation
Bureau of Sport Fisheries and Wildlife
Environmental Research Institute
National Park Service
University of Montana
Wildlife Management Institute
Montana Fish and Game Department
Boone and Crockett Club
New York Zoological Society
Atomic Energy Commission
University of Montana Foundation, Natural Resources Center
Yellowstone Park Company

Example of funding for one year:

Annual Financial Statement for the Grizzly Bear Ecology and Radio-tracking Projects (1964)

Agency	1964 Contribution	Remarks
National Geographic	$10,000	Grant funds and photographic equipment
National Science Foundation	11,000	
Philco Corporation	40,000	To Environmental Research Institute for research and development of electronic equipment
University of Montana	2,000	
Montana Fish and Game	3,000	
Environmental Research Institute	9,000	
Boone and Crockett Club	2,300	
New York Zoological Society	1,000	
American Museum of Natural History	500	
Wildlife Management Institute	500	Over and above annual contribution to the Montana Cooperative Wildlife Research Unit
Yellowstone Park Company	2,000	Housing (Lab and utilities) in Yellowstone
National Park Service	6,800	Salary and transportation of research assistant and utilities in Yellowstone
Fish and Wildlife Service	4,000	Salary and transportation of Unit Leader
Fish and Wildlife Service	3,500	Radio development and maintenance
Penrose Hospital	2,000	Chemical analysis of blood Micropathology
University of Minnesota	300	Chemical analysis of milk
Hoke Franciscus	2,000	Electronic consulting
Total	$99,900	