

Goerke - Cold Meadows - Cascade 83611

UNITED STATES DEPARTMENT OF AGRICULTURE

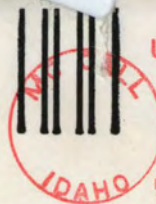
FOREST SERVICE

PAYETTE NATIONAL FOREST

McCALL, IDAHO 83638

OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE, \$300



U.S. OFFICIAL MAIL

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PENALTY  
FOR  
PRIVATE  
USE  
\$300

0.22

\*  
P.B. METER  
1395748

Jim + Holly  
Taylor Ranch  
Air Rte

Cascade, Id. 83611

# Summary of U. of I. - USFS Cooperative Trail

Project July 29 - Aug 4, 1986

## USFS provided:

- 2 supervisors

- R. Goetke - former college professor whose main area of expertise is the relationship between nature and society and who has had 17 seasons of field experience in wilderness management

- M. Goetke - former college professor of social psychology with published research and also with 17 seasons of field experience in wilderness management

- tools and packing skills

## U of I provided:

- 2 interns for 6 1/2 days

- 1 packhorse, 4hr

- 1 person to lead packhorse to and from project twice, 4hr.

- accommodations at Taylor Ranch for part of project

## The project

- consisted of routine heavy maintenance along a 10m stretch of the Big Creek Trail between Kobai Basin and the Middle Fork of the Salmon River

- and two special projects

- removing a solid rock face adjacent to a narrow section of trail

- reengineering and reconstructing a short section of trail highly susceptible to

spring river current damage

Learning  
skills

- working + excavating solid rock with hand tools
- moving heavy rock (some 71000 lb)
- laying rock retaining walls
- tree falling

- knowledge

- theory and techniques of trail construction in steep, rocky terrain subjected to mud and rock slides
- and to undercutting by large river
- "theory and techniques of campground naturalization" (some)

- 4 lecture-discussion sessions

1. What is wilderness?
2. Wilderness management as the management of people and their activities.
3. Wilderness through history and in other cultures.
4. What is the value of wilderness?

Critique

- good intern recruitment; both excellent workers, prompt, and quick to catch on.
- excellent cooperation with Jim, Holly and Tony of Taylor Ranch

- feel that the potential exists for developing a very innovative and outstanding wilderness intern program that could in fact capture the imagination of that segment of the public from which funding might be sought.

Jim + Holly -  
I'm going to send Ed K. a copy of this I and to Earl  
another x Clem.  
a copy of the

R + M Gabe 8/11/86

Cold Mews  
Jues 8-12-86

Dear Holly + Jim,

As I understood it, one of the people coming in with Ed this week was interested in air-atmospheric monitoring. Wondered what he - she? - thought of all this smoke. That's the other side of the coin of not suppressing the wilderness fires for those of us who live back here.

Hope you had a good visit with your former boss - & that she, or those Ed brought in, will eventually do some work out of there.

I wondered if Ed was the one who planned that conference in Moscow a couple yrs ago - the one where the Chief of the F.S., Max Petersen, spoke. The one where you got acquainted with Tim from Alaska who hunted with Bob G. last fall.

Clem's group of overhead passed through on Friday morning. Sonny La Salle, the supervisor, was more awake that time. He was easy to talk to and seemed knowledgeable + on the ball. However doubt we'll ever have contact with him again.

Since all of Pioneer's planes were on fires, dispatch subcontracted McCall Air Taxi to come get Sonny - and the tools, etc. <sup>Friday noon</sup> That would only happen for the permanents. The rest of us would be left stranded.

You mentioned not wanting things flown in there - eg. Ed McCollum + feed. I got to thinking that in the past we've sent a pair of brushes or a small box of food in on the mail plane to pick up when we went by. Please let us know if you do not want this - or anything else that is a problem. Otherwise we have no way of knowing.

So much going on last week I didn't get to ask what is the latest as far as Henrich's plans. In June you thought he was not going to be in this winter. Who is going to caretake through hunting season this yr? However, I haven't heard if Kenny Jones has been coming in as much since the Semend's cabin is gone... so a caretaker may not be as essential. We don't want the job. I was just curious since Bill Weaver did it last yr.

We turned down Clem's offer to go to Cabin Creek last fall. Marguerite and Shaun went instead. Shaun had a baby boy last month. Sally White + Joann Ferguson have already quit trail crew. Doubt either will be back next yr.

A fellow, Benjamin, from Allison R. spent a night on the runway as a tourist. I asked him about the gulls who got hurt but it seemed vague in his memory. As you inferred I guess it didn't turn out to be that serious.

Tell Tony hello. Was also glad to meet Howard Q.

I like being able to talk to the people whose names we've heard so often.

Have you tried arranging a longer term housing exchange with someone in Moscow so you could by pass the logistical problems of trying to set up house keeping for only a month or two. If you needed to, you could try an ad... though the univ. may be particular who is at Tayla. Through an ad you might be able to find a place to live in Moscow of a retired couple who goes south who would let you stay in their place... while Tony + Howard mind the store at Tayla.

When we flew back Thurs Rolf had an appt with an outfitter whose camp is being relocated off the runway. Also the new camp is supposed to be the complete take down type. The negotiations have dragged on + on as naturally they don't want to give up the convenience + comforts of the elaborate camp right next to the airstrip. Not only time consuming but uncomfortable at times + psychologically draining. Change is always hard no matter how gradual or forewarned.

Now we're getting ready to leave for a today trip to work trails south west of here, inspect a couple outfitter camps + flag out a re route in

Club Meadows which we will put in next June with the SCA crew.

When we terminate in mid October, get in our pickup & head south, one of the feelings I'm aware of right at first is how nice it is to be just a private citizen again.

I asked Earl Kimball for a copy of Krump's proposal for the coop. betw OVI & Grassel which we saw at your house, so we now have our own copy.

All for now... Thanks again\* for everything  
Love,

Margaret & Roy

\* Am assuming you'll get my note with your groceries tomorrow



Cold Mdw's  
Aug 10

Holly + Tim -

Thanks for all

the nice things at Taylor  
Ranch.

And for sending the squash ... +  
for loading the tools ... + loaning  
us the rope .....

We will send a real letter soon.

Margaret

We have sent in the requisition for  
rope to Clem ... but it will take time -  
maybe a long time.

Hope you got my message through  
Arnold's radio that the plane was coming  
for the tools Friday morning ... so it wasn't  
a surprise.

M.



To  
Jim. Holly  
Taylor Ranch

Cold M. 2005



# WILDERNESS RESEARCH SUMMER INTERNSHIP AT TAYLOR RANCH

**Applications due by April 10**

## HOW TO APPLY

Send a typed letter which summarizes your relevant coursework, experience (paid or unpaid), and why you are interested in this position. Include two references which could be contacted.

Applications must be submitted to Dr. Ed Krumpe, Room 19 in Forestry Building

**RcMgt 397 1 or 2 credits**

## **COMBINATION FIELD RESEARCH AND RANCH WORK**

**Boreal owl observations**

**Small mammal trapping**

**Recreation impacts**

**Archaeology**

**Herbarium collection**

**Streambank stabilization**

**Haying and woodcutting**

**with horses**

**Time off for backpacking and exploring**

**All students welcome to apply.**



**\$1300 HONORARIUM MAY 20-AUGUST 7, 1987**



**WILDERNESS RESEARCH  
SUMMER INTERNSHIP  
AT  
TAYLOR RANCH**

**SLIDE SHOW AND PRESENTATION**

**THURSDAY, 12:30 p.m.**

**ROOM 10 FWR**

**COMBINATION FIELD RESEARCH/RANCH WORK**

**\$1,000 HONORARIUM MAY 21-JULY 19, 1986**

**All students welcome to apply.**



TAYLOR RANCH  
Internship 1988  
May 23<sup>rd</sup> - Aug 3<sup>rd</sup>

Intro

- J. & H. TR managers since 1982
  - 3<sup>rd</sup> year TR internship offered
  - Looking for two people willing to do hard work in an isolated setting / enjoy wilderness activities... Combination Research / Ranch work
  - TR is a <sup>UofT</sup> facility whose purpose is to support wilderness research & education.
- May 23-Aug 3 \$1400

Slides

- 1, 2 • Taylor Ranch along Big Cr. / middle of RNR / a UofT field str. since 1971
- 3, 4, 5 • Access to TR by bush plane / also brings weekly mail & supplies
- 6, 7, 8 • TR is comprised of a dozen buildings, some dating to the turn of the century. First used as a placer-mine - then guest ranch before UofT.
- 9, 10, 11, 12 • We maintain between 8-10 horses & mules for research-camp packing, ranch work & general transportation. The ranch's stock is self-contained - we put up hay & shoe
- 13, 14 • Two noteworthy longterm research projects have been conducted by Maurice H. on predator ecology (M. Lions), and Frank Georhardy has studied the existence of Sheepcater Indians who occupied the area.
- 15, 16, 17 • Last summers interns Lewis W. and Ray Hase surveyed bighorn sheep lambing areas - mostly locating suitable lambing habitat

Research

- 18 • This years interns will get to work on a variety of research projects. Continued assessment of lambing areas will be done first

OVER

19, 20 • <sup>This spring</sup> We may be radio collaring some ewes to help locate lambing areas and rams to assess their movement patterns relative to Hunting units

21, 22, 23, 24 • Other ~~possible~~ research involvement will be:  
- assisting <sup>Dr.</sup> Jim Peck with range shrub sampling  
and - helping with the ranches herbarium collection  
- assisting <sup>Collecting & mounting of plants</sup> Dr. Frank Youhardy with archaeological survey

Research  
Maintenance

25, 26, 27

• Replenishing the ranch's firewood supply will be an ongoing job, providing the opportunity to learn some new skills: CROSSCUT SAW, FIREWOOD PALKING, LOG SKIDDING BY TEAM

28, 29, 30, 31

• Putting up hay is <sup>a</sup> the priority summer job, when the hay is ready we work fairly continuously. Haying also provides learning some new-old skills ... its old fashioned haying but could be worse!

32, 33, 34

• Upkeep on wood rail fencing another task ... using a draw knife & teeth!

35

• Daily chores involving ranch cleanup / irrigating hay

36, 37, 38

• Interns will probably be involved in airstrip bank stabilization project later in summer.

39, 40, 41

• Learning a variety of new skills such as horse shoeing and packing is the emphasis of the T.R. internship program

WORK  
FUN

42, 43, 44

• It won't all be work though, there will be ample free time to explore the surrounding area with a 10 <sup>days</sup> on / 4 <sup>days</sup> off work schedule ... fishing in Big Creek is excellent

45, 46, 47, 48  
49

• There are lots of interesting places to explore: old homesteads, unusual geology (Cross), picturesque scenery

50-56

• A camera is desirable to capture wildlife encounters and record your summer experiences (Photographic <sup>GREAT</sup> opportunity - made possible by living in the wilderness)

## How to Apply

Send a typed letter which summarizes your relevant coursework, experience (paid or unpaid), and why you are interested in this position. Include two references which could be contacted.

Applications must be submitted to <sup>Dr. Bill Ed</sup> ~~Dr. Ed~~  
Krumpe, Room 19 in Forestry Building  
by Feb. 19.

Top five applicants will be interviewed  
on or near March 1<sup>st</sup>

## Requirements for 1 or 2 Rec Mgt 397 credits

- \* Keep a field notebook of research aspect  
- details provided per task.
- \* Typed summary of internship experience

Pay - \$1400 + room (you provide food)

Introduction: J&H

2 people at TR this summer  
research & ranch work

Dates: May 21 - July 19

Responsibilities: small mammal trapping, prepare study skins,  
plant collecting and mounting plants for herbarium  
and possibly some archaeological survey work.

Also spend half of time on maintenance proj TR

Looking for people work minimum supervision, responsible  
collecting accurate sci. data and willing to work  
on physically demanding outdoor work.

Jim will ~~discuss~~ <sup>talk about</sup> Taylor Ranch and facilities  
... my study sheep pict.

Recently initiated a long term ecological monitoring progr. <sup>TR</sup>

One phase - estab. small mammal trap plots in a  
variety of habitats, checked annually.

In conjunction with trapping <sup>animal</sup> specimens collected and  
made into study skins

~~FRANK~~ Building a Herbarium collection for TR and continue  
to add to collection and mount specimens.

Habitats - Big Cr drainage, grass, riparian, mid elev, high elev LP, lake

Trapping & collecting will be done from TR and will  
involve several overnight backpacking and horse  
trips.

Topper

Habitat  
Pappoose Lk

BKPK  
Horses

~~Topper~~

Assessing & Monitoring Backcountry Trail  
Conditions Dale N. Cole USDA FS  
Intermountain F&R Exp Sta Ogden UT 84401  
Res. Paper INT-303 Feb 1983



## Jim's Part

## Work study slides

Holly

Purpose of TR is to provide a facility for researchers whose work is dependent upon a wilderness setting.

Intro.

Comment

The facility is maintained in a manner which is the least impacting to surrounding wilderness quality.

- Taylor Ranch along Big Cr. in the middle of the RNR
  - extremely rugged terrain
- Primary access by bush plane. Weekly mail delivery/supplies
- Backpacking & horse packing other access - 40 mile trip.
- TR has 5 horses and 2 mules used for packing/work.
- There are 11 buildings on the compound - old bldg. now lab.
  - accommodate 15-20.
- Taylor cabin, where we live... no electricity running H<sub>2</sub>O 8 months of year.
- x • Research out of T.R. since late 60's. Univ. purchased '69
  - M.H. looked at mountain lion predation on deer & elk
    - Howard Q & Tony Wright doing follow-up lion work
  - In the last 4 years - Gary Koehler & Maurice H. have conducted extensive research on bobcat.
  - During that same time Frank Leonhardy has investigated settlement - subsistence patterns of Sal. Riv. Mtn. Indians
  - For the last 2 years Holly has been studying the behavior of Bighorn sheep, deer, elk on Cliff Cr. wintering area across from ranch

STOP

Holly

## Maintenance Aspect

- During the hay harvest in early July we'll work continuously until it's done.
- The acules have the toughest job
- Weather permitting, the job can be accomplished in 10 days or so.
- We now have a barn to protect the fruits of our labor
- Putting up firewood will be another chore... note whose on upstream side of log!
- With aid of the wagon the jobs a lot easier
- The ranch needs in excess of 10 cords for winter use. We'll try for  $\frac{1}{2}$  that while work study people are in.
- We will also do stabilization work on the airstrip to prevent erosion and help drainage.
- It won't all be work, there will be plenty of time for fishing, hiking, or whatever.

## Payment & How to Apply

- We will provide air transportation from and back to Cascade
- ~~Payment~~ <sup>There</sup> will be a cabin provided with cooking utensils
- Payment will be \$1,000 for eight weeks work & for 2 credit hours? 10 on 1/4 off schedule

## Application

- Send ~~a~~ a typed letter which summarizes your relevant coursework, ~~work~~ <sup>(paid or unpaid)</sup> experience, and why you ~~are~~ are interested in this position. ~~Give it to Dr. Ed Krump~~ Include 2 references which could be contacted.
- Applications must be submitted to Dr. Ed Krump by March 28<sup>th</sup>, In room 19 (basement) ~~in this bldg~~ FORESTRY BLDG
- Selected people will be interviewed the first week of April ~~and the chosen ~~two~~~~ <sup>and</sup> notified soon after.

WRITE WAYNE  
- COLL. PERMIT

Ed - How soon until  
first pay?

WORK STUDY  
PROGRAM

See Rowke & Ables for credit  
- write outline of duties for them

• Intro of us

• Taylor Ranch will hire two people this summer  
on a work study honorarium

- Dates

- ~~Pay / Accomodations~~ Qualifications - <sup>whats</sup> expected

- Responsibilities - paper of findings (credits?)

- ~~Qualifications / Applications~~

• Taylor Ranch facilities - Purpose of T.R.

(4) - Brief History - past/current projects

(3) - Buildings - no electricity

(2) - Pack stock - mule team,

\* (1) - Location and access

General description of area - terrain ruggedness

• Research Responsibilities

- One phase of monitoring program - ecological

- Goals: 1) inventory small mammal populations

2) small mammal collection for T.R.

3) work on herbarium collection (add-

itional collection and mounting)

including overnight horse and backpacking trip

• Maintenance Responsibilities

- Assist with haying

- " with firewood

- " with building improvements

- " " airstrip stabilization.

• How to apply

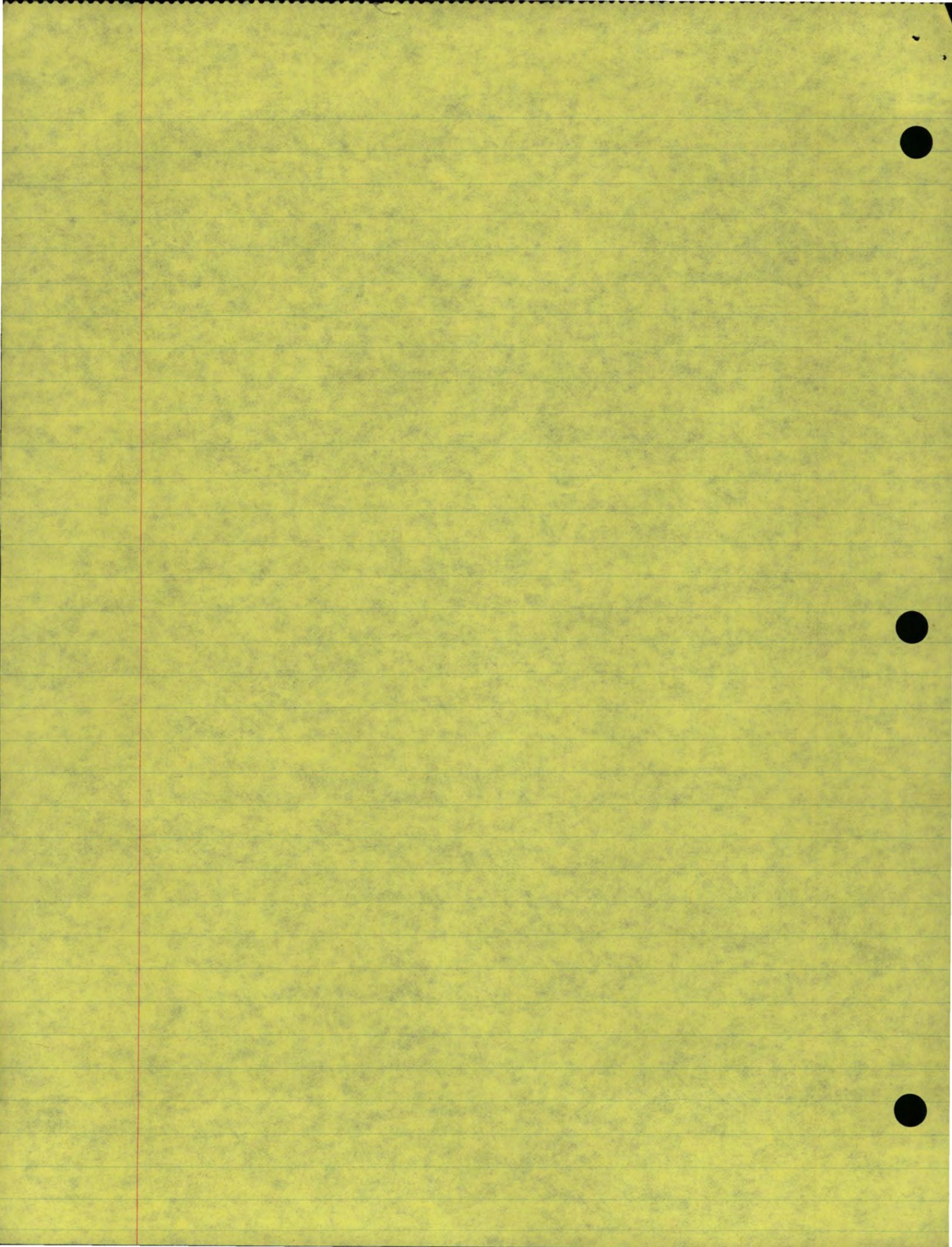
(credits)

- Pay and air access - 1 round trip from Cascade.

- Cabin to stay in w/ cooking facilities.

- Provide your own food.

? - Need camping gear



# Summer Internship 1986

## Slide Presentation

Introduction: J. & H. Managers of Taylor Ranch  
Two people to work at Taylor Ranch this summer  
in a combination of research and ranch work

Dates May - July 19<sup>th</sup>

Responsibilities will include working on small mammal trapping, preparing study skins and some plant collecting and mounting plants for herbarium. Also spend half of your time on maintenance projects at TR.

We are looking for people who can work well with minimum supervision, can <sup>both accurately</sup> collect <sup>reliable</sup> scientific data and <sup>are</sup> willing to work on physically demanding <sup>outdoor</sup> maintenance work.

Jim ~~o~~ will tell you about TAYLOR RANCH

Habitat/Plt  
Comm

Herbarium

Recently initiated a long term ecological monitoring program at TR. One phase is to establish ~~a~~ small mammal trapping plots <sup>in a variety of habitats</sup> which will be checked annually. <sup>This summer we will start this project</sup> In conjunction w/ trapping, specimens will be collected <sup>prepared</sup> for a small mammal study skin collection at TR. Herbarium collection - <sup>collect</sup> additional specimens and mount specimens.

Trapping & collecting will be done from TR and will also involve several <sup>overnight</sup> backpacking and horse trips.

\* Ron Ball / Ann Grof Thank You

(dermestid beetles Don Johnson)

Internship Credit -

helps for liability

students dont want to pay extra tuition

best if sign up for at least one credit

presentation brown bag to students

log of data & summary

\* collect skulls & skeletons

Information on Application

Other topics -

FS support students longer into season w/ another proj

Benefit to H & J to have supervisory exper. and teaching

Info on National Inventory of Biol Monitoring Programs

send reports that were derived from inventories

S.I. Auerbach, Director

Environmental Sci Div

Oak Ridge Nat. Lab

Po Box X

Oak Ridge TN 37831

HUMAN RESOURCE AGREEMENT

between the

University of Idaho - Wilderness Research Center and  
USDA Forest Service, Payette National Forest

This agreement is made between the University of Idaho - Wilderness Research Center, hereinafter called the CENTER, and the USDA Forest Service, Payette National Forest, hereinafter called the FOREST under the provisions of P.L. 94-148.

WITNESSETH:

WHEREAS, the FOREST has the responsibility for administration of National Forest lands; and

WHEREAS, the CENTER conducts and maintains education programs for the purpose of training, developing and educating persons in the principles and practices of Wilderness management and conservation; and

WHEREAS, both parties to this agreement deem it mutually advantageous that participants broaden and develop the scope of their education experience by providing their services to the FOREST;

NOW THEREFORE, in consideration for the above premises, the parties hereto agree as follows:

A. The CENTER agrees to:

1. Assign the student interns for a portion of their work period projects agreed to in advance by the CENTER and FOREST.
2. Handle administrative records required for participants in this program.
3. Pay all administrative and operating expenses for maintaining the participants in these projects and bill the FOREST for its share of those costs.
4. Require no records or reports from the FOREST except a post-program evaluation and any other appropriate information that may be needed in connection with proposed projects.
5. Upon request of the FOREST, make available all accounting books and supporting records of the CENTER for analysis by qualified representatives of the FOREST or other Federal agencies authorized to review FOREST activities.



6. Upon satisfactory completion of the agreed to projects, the CENTER shall send final invoices for actual expenses incurred to the FOREST, not to exceed agreed to amount of \$350/student intern.

B. The FOREST agrees:

1. To provide projects, training, evaluation, transportation and housing as agreed in advance between the CENTER and FOREST in an amount not to exceed the agreed upon amount of \$350/student intern upon satisfactory completion of the agreed to projects.
2. That the CENTER will invoice cooperating FOREST on a final work period reimbursement basis and that invoices are to be paid within 30 days of receipt.
3. That student interns shall not be considered as Federal employees except for purposes of:
  - a. Chapter 171 of Title 28, U.S.C. relating to Tort Claims and,
  - b. Chapter 82 of Title 5, U.S.C. relating to compensation for injuries, to the extent not covered by the CENTER.

C. It is Mutually agreed that:

1. An implementing agreement will be entered into by the CENTER and cooperating FOREST. This agreement shall be the only authorizing agreement. For the purpose of identifying the person(s) to be engaged, describing the project(s) to be undertaken. No invoices shall be made before an implementing agreement is entered into by the CENER and the FOREST.
2. The FOREST and the CENTER will comply with the provisions of Title VI of the Civil Rights Act of 1984, as those provisions relate to recruitment and work experience assignments.
3. The Prompt Payment Act, Public Law 97-177 (96 Stat. 85, 31 USC 1801) is applicable to payments under this agreement. Payments will be made either by check or wire transfer through the Treasury Financial Communications system at the option of the Government.
4. Nothing in this agreement shall be construed as obligating the FOREST to expand or as involving the United States in any contract or other obligation for the future payment of money in excess of appropriations authorized by laws and administratively allocated for this work.

- 5. All projects are also subject to availability of applicants and funds provided by the CENTER.
- 6. No member of, or delegate to Congress or Resident Commissioner shall be admitted to any share or part of this agreement, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this agreement if made with a corporation for its general benefit.
- 7. The CENTER will be deemed the employer participating in any project under this agreement, but the FOREST will be responsible for the direct supervision of the work performed.
- 8. In the event of injury to the student while on the job, the student will be referred to the CENTER for proper action. Treatment for injuries will be in facilities authorized by the Center under appropriate University of Idaho-Wilderness Research Center worker's compensation regulations.
- 9. Either party may terminate this agreement by providing 180 days written notice. Unless terminated by written notice, this agreement will remain in force indefinitely.

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the last date written below.

CENTER

FOREST

\_\_\_\_\_

Name

\_\_\_\_\_

Name

\_\_\_\_\_

Title

Forest Supervisor  
\_\_\_\_\_

Title

\_\_\_\_\_

Date

\_\_\_\_\_

Date

sharpen crosscuts  
new single trees  
handles to slip scoop

mowing machine wheels  
buy Aerial photos

## Summer Jobs

Gabians

Linoleum - lab / Arlow's

Refinish floors Duplex

(Refinish Taylor floor)

Airstrip drainage

Airstrip leveling / seeding

Firewood

Fences - ~~cut~~ poles, build

Cabin or barn float?

Clean trees from airstrip pasture

Haying

- Study skins / Trap cans?

- Herbarium mount

- Water qual - Ed?

- Cougar activity

- Archaeology?

- Coastal disjuncts? Feed J

- Winter range cond/trend - plots

(Slip scoop Big Cr.)

(cut trees for planes)

Paint lab ceiling

(Knotty pine Lab?)

Push irrigation?

Irrigate hayfields.

Linseed T.C. & Cookhi<sup>outh</sup>

Roofing



# **WILDERNESS RESEARCH SUMMER INTERNSHIP AT TAYLOR RANCH**

**Applications due by April 10**

## HOW TO APPLY

Send a typed letter which summarizes your relevant coursework, experience (paid or unpaid), and why you are interested in this position. Include two references which could be contacted.

Applications must be submitted to Dr. Ed Krumpe, Room 19 in Forestry Building

**RcMgt 397 1 or 2 credits**

## **COMBINATION FIELD RESEARCH AND RANCH WORK**

**Boreal owl observations**

**Small mammal trapping**

**Recreation impacts**

**Archaeology**

**Herbarium collection**

**Streambank stabilization**

**Haying and woodcutting**

**with horses**

**Time off for backpacking and exploring**

**All students welcome to apply.**



**\$1300 HONORARIUM MAY 20-AUGUST 7, 1987**



# WILDERNESS RESEARCH SUMMER INTERNSHIP AT TAYLOR RANCH

## SLIDE SHOW

Thursday February 19      11:30 Room 10

### TO APPLY

Send a typed letter summarizing relevant coursework, experience, and why you are interested in this position. Include two references.

Submit applications to Dr. Ed Krumpke, Room 19 in Forestry Building, by February 25.

Selected people will be interviewed.

### COMBINATION FIELD RESEARCH/RANCH WORK

Boreal owl observations

Haying & woodcutting with horses

Small mammal trapping

Streambank stabilization

Recreation impacts

Roofing

Flooring

Archaeology

All students welcome to apply.



*for 2 credits in Rec. Management 397*

**\$1000 HONORARIUM**

**MAY 20-JULY 24, 1987**



# WILDERNESS RESEARCH SUMMER INTERNSHIP AT TAYLOR RANCH

## HOW TO APPLY

Send a typed letter which summarizes your relevant coursework, experience (paid or unpaid), and why you are interested in this position. Include two references which could be contacted.

Applications must be submitted to Dr. Ed Krumpe, Room 19 in Forestry Building, by March 28.

Selected people will be interviewed the first week of April and notified soon after.

## COMBINATION FIELD RESEARCH/RANCH WORK

small mammal  
and plant collection

campsite  
inventory

haying, wood cutting,  
bldg. maintenance,  
trail work

**All students welcome to apply.**



**\$1300 HONORARIUM MAY 21-AUG.6, 1986**

# From: Graeme Caughley Analysis of Vertebrate Populations

see

Seber G.A.F. 1973 The Estimation of Animal Abundance and Related Parameters  
Cormack R.M. 1968 The Statistics of capture-recapture, *Oceanogr, Mar. Biol. Ann. Rev.* 6:455-506  
Griffin, London.

## Chapter 10: MARK-RECAPTURE

A Sample of animals is captured, marked then released. The properties of this identifiable sample then being used to estimate the properties of the population as a whole.

\* We will investigate population size (altho movement, growth rate, fecundity/mort, imm/emigr, and rate of  $\uparrow$  can also be determined by this technique)

Use simpler method if info can be derived another way as M-R is expensive & time consuming & models & results may be inaccurate.

\* Very Important

Assumptions: ① equal catchability of marked & unmarked.  
Problems:  
② inherent behavior of animal two traps differ ③ results of learning ④ opportunity (lack of) of capture (within its homerange)

? To solve ② above, can change the method of capture to decrease chances of capture dependent on a decision made by the animal; use a model that can cope with capture proneness/shyness, or reduce number of recapture occasions so no animal has time to learn about how to/not to get caught.

\* Problem ③ above is probably the most important & receives least attention. Animals must be marked at stations located at random throughout the range of the population or be recaptured <sup>and?</sup> at randomly located stations. Unless trap grid is tight enough that every home range is occupied by at least one trap, failure to re-randomize trapping stations between marking and recapturing occasions results in excessively high rate of recapture and an underestimate of population size. To avoid this place traps at random on only 25% of grid intercepts at marking. Before recapture move traps to new set of grid intercepts determined by a table of random numbers. If exper. design calls for more than one recapture randomize capture stations again.

Interpretation of Population Size by <sup>estimated</sup> Mark-Recapture.  
 mark at random placed traps, recapture at newly random placed traps  
Peterson Estimate: 1 mark & 1 recapture.

The proportion of  $\langle$ mice $\rangle$  in the population that ~~has~~ are marked can be estimated from the proportion of these in a sample population.  $\frac{M}{N} = \frac{m}{n}$  where  $M$  = animals marked  
 $N$  = population size

$m$  = marked animals recaptured

$n$  = sample size in recapture night

$$N = \frac{Mn}{m} \text{ for pop. size}$$

Assumptions:

- ① equal trapability among individuals
- ② no animals born or immigrates between mark & recapture
- ③ marked & unmarked die or emigrate at same rate
- ④ no marks are lost

For use when # of recaptured marked animals has not been determined:

$$N = \frac{M(n+1)}{m+1}$$

alleviates overestimate bias by incorporating a formal standard error of approximately

$$SE = \sqrt{\frac{M^2(n+1)(n-m)}{(m+1)^2(m+2)}}$$

$$N = \frac{Mn}{m}$$

biased unless number to be recaptured is determined before recapture (Inverse Sampling). Then use Bailey's:  $N = \frac{n(M+1)}{m-1}$

"The advantages of Inverse Sampling are so great that pains should be taken to acquire the info to make it work." Disadvantage of Inverse Sampling is need for prior decision on # to be captured & must be a number that can reasonably be obtained in the field.

Can calculate precision (desired) of estimate see p. 143 for equation. In a population between 100-1000 the following combinations of  $M$  &  $m$  are adequate:

$M$ :	100	200	250
$m$ :	55	80	90

See p 143 for Inverse Sampling SE equation

? How Impt.

\*

If we order the tally of mark-unmark then can play with these equations



### Schumacher's Method:

Animals marked on several occasions, the population size being estimated from the rate at which the proportion of marked individuals rises as more are marked.

$$N = \frac{\sum M_i^2 n_i}{\sum M_i m_i}$$

where  $N$  = constant pop. size  
 $M_i$  = # marked before  $i$ th sample per.  
 $n_i$  = # captured on  $i$ th sample occasion  
 $m_i$  = " " " " that had been previously marked

can calculate standard error & confidence limits

A major advantage of this method is that it allows assumption of equal trappability to be checked: Unless assumption is violated the regression of  $m_i/n_i$  on  $M_i$  is linear thru the origin with slope of  $1/N$ .

Constraints (more rigid than Petersens) ① pop. maintain size and no mortality or emigration ② No natality & immigr. ③ equal catchability among marked & unmarked.

Baileys Triple Catch - Use when time between recapture & takes births etc into account Mark 2 occasions - different marks, recapture on 2 occasions.

Constraints: No \$ for trapping/monitoring - must be time efficient, adequate, but minimal info. Two weeks effort. Desirable tech that could be expanded on if \$\$\$ help available.

## Comparison

	<u>Snap</u>	M-R Live Traps non random traps	M-R <u>Live Trap w/Random traps</u>
Time	less?	less	more
Efficiency	+ quick, easy ID		- random grids - $\Delta$ daily (or inaccurate)
Expertise			
Statistical Validity	o relative abundance	index w/ catchability bias	+ Estimate of population actual stats available (Peterson, Schumacker, Baileys triple catch)
Use for additional data collection	o Presence, rel abundance	rel. abund. index	$\oplus$ could be expanded - m/vmt, growth rate, imm emig. mort)
Assumptions (biases)	equal trapability?		equal trapability behav innate to trap (-) learning o opportunity for capture o opportunity for capture $\Delta$ random daily
Trap Soln			
Negatives	long term impact on killing of mice	low estimate of pop. size	Complicated set up
	not recommended statistically		
Trappers experience	No bias		age, sex could be difficult, must be accurate about random grid loc.

# Mark - Recapture - Live Traps

Live Traps

Capture,  $\hat{c}$  clip toe  $\hat{r}$  release Record how many

Capture Record how many  $\hat{c}$  how many marked

From Graeme Cawley

Ch4:

Abundance <sup>this instance</sup>: # of animals / unit area (absolute density)  
or density of one pop. relative to that of another (relative density)

### Density Indices (Relative Density)

Most ecological problems can be tackled with help of indices of density, absolute estimates being unnecessary luxuries. Index-ideally <sup>its</sup> trend is linear on absolute density, but non-linear ~~or~~ sometimes sufficient. Feces / m<sup>2</sup>, catch / unit effort. Density index useful only in comparisons - one population to another or single pop. over years = index is sufficient meas of abundance.



← This curvilinear thru origin relationship can be transformed to make density linear on the index.

Non Linear Positive Regression (Density of mice related to % of traps catching mice/night).

### Catch per Unit Effort

Useful index when catching does not greatly ~~increase~~ <sup>reduce</sup> population size. Absolute catch per unit of time is a better index when catches are large relative to population size.

Never use catch / unit effort as an index unless the population is being exploited. <sup>WHY??</sup> ① requires more labor ② causes more disturbance ③ less accurate than most indices.

The number of small mammals captured per trap-night depends not only on density but on the kind of trap and kind of bait.

Saturation. "Catching of 1 animal should not interfere with trapping of another. Catch / trap / night can never be > 1 and the regression of density on catch / trap-night is therefore curved." "However below an index of 0.2 the regression is almost linear... →

Assumptions: ① standard conditions (weather) ② standard catching efficiency ③ standard (1 type) traps & bait ④ no trap saturation (one catch, interference with others) ⑤ trap happy/shy

Above 0.2, c.H.-n. increases inaccurate meas. of relative density and index must be rectified by method in "Frequency measurements" section of chapter.

\* Limit trapping period for sm. mammals to avoid trap happy-trap shy learning, to influence results. Capturing methods liable to generate these effects should not be used if rate of capture is employed as an index of density.

\* "Frequency Measurements" = Presence or absence on plot. Its relationship to Absolute density is non-linear. Number of empty traps:  $1-f = e^{-\bar{x}}$  and full traps  $f = 1 - e^{-\bar{x}}$ . Determine  $\bar{x}$  by exponential table (app. I) (at  $f = .2$  density = .2/unit at  $f = .3$  density = .36 to correct for unavailable "used" traps). < Must transform frequencies to density using ~~Poisson distribution~~ eq  $f = 1 - e^{-\bar{x}}$  from the Poisson distribution where  $f$  = freq of trap catches and  $\bar{x}$  = density / (trap) unit >

Assumptions: All individuals equal probability occur on plot at sampling time or equal catchability in trapping. These assumpt. usually violated in practice which results in underestimate bias for density ( $\uparrow$  underest. w/  $\uparrow$  density)

Research Credits available?

Jan: note for slide show  
develop Honorarium criteria  
Feb end: slide show & present criteria  
March date due for resumes & let  
people know

## Honorariums

Who 3<sup>-4</sup> students @ \$1000 + 1 round trip to TR +  
housing at TR  
↳ going into Jr or Sr year 2 month period  
T.R.  
describe more Why To collect data for ecological monitoring.

Students Obligations: Write proposal?  
Prelim lit. search & reading  
Haying - will provide help 1 week (7 days)  
Prepare written report of findings  
Weekly meetings  
Keep daily field notes  
Present research to dept in seminar after summer

- Topics
- A small mammal trapping / census
  - ✓ A bird trapping / bird census
  - A study skin prep.
  - P herbarium mounting
  - 2-3 ✓ PAW \* lakes ecosystems (water qual., herps, <sup>fish</sup> mammals, riparian veg.)
  - A reptile <sup>herp</sup> survey - Big Cr canyon
  - A river mammal inventory (beaver, otter)
  - R ~~campsite~~ campsite impact inventory
  - W cutthroat migration?
  - ✓ W aquatic insect inventory / limnology
  - P inventory coastal disjuncts
  - 4 P \* riparian - species comp. (estab long term plots) Caxy → me
  - P Big Cr winter range conditions.
  - ✓ P veg. plots - annual measmts.
  - W Giardia inventory?
  - P soil types - mineral comp.

Design honorarium program  
Eval resumes & choose student

Provide transport of gear on horses

H&J Weekly meetings  
Orientation & intro. <sup>to</sup> field techniques.  
Final critique of project

10" x 10" x 10 ext plywood  
1 x 2 ?

# DON JOHNSON - Trapping

Pit traps ~~10" x 10"~~ <sup>3#</sup> coffee cans 2 cans deep;  
10" x 10" ext. plywood raised by 1 x 2 to  
cover <sup>-can paint w/ enamel.</sup> Cotton & oats in for mice comfort

→ Snap traps to see what is there -  
temporary

Water shrew - where water meets flat  
rock use snap trap & peanut butter

Pits - transect line 9' trap 40' apart  
1 → MIMO - in deep soils grassland <sup>no fence needed</sup>

Riparian - snap traps

Interested in:

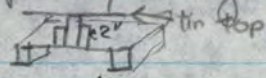
Phenacomys intermedius - woods, Alpmtn - short tail MIMO  
Water shrews: S. palustris

All shrews Microsorex hoyi <sup>3#</sup> → 3 upper cusps  
Rep sample of common things

Trap & keep track of # nights & # of traps =  
~~trap~~ kills / 100 trap-nights

Phenacomys - key in Mammals of Idaho

Traps 50 / 3 spaces / 3 nights w/ peanut butter

Can make lid 

Homogeneous # of traps - avoid edges in trapping  
For peak pop. at lowlands 1 month after  
snow gone

From A Pilot Prog For Long Term Monitor ... Woodstole

### Monitoring / Small Mammal Trap

Pick most imp't veg/soil/aspect/altitude &

select 5 sample stations

Each sta:

- veg map, 5 photo points, 6plt phenol, rodents 40% trap x 5 nights
- 4x/yr, herbiv count, pred scent sta, passerines, raptors

Wayne M  
river mammal  
survey

Rodent Trapping: 5 sta, same veg. <sup>Live</sup> Trap: 40 traps for 5 days, 4 times per year. Include species, sex, size. Adjacent each station 2 times/yr collect adult males of most abundant sp to freeze.

White Star  
Cragon  
herps.

Rept sampling - Stu Cragon Big Cr Canyon (River Mamm Survey)  
 (Scent stations - predators) (Raptor nest checks)  
 (Insect traps) <sup>biweekly each sta 2 types</sup> (Lakes - herp too)  
 (Riparian / veg plots) <sup>Bird count</sup> (Aquatic Insect) <sup>(winter range for 5 sta plots)</sup> (map COMA - costal disj) <sup>grass</sup>

Rodents  
Kerley  
Maser  
Fly insects  
butter

Veg: Leaf area meas annually or more for each stratum. Indicates ecosyst condition & biomass. Cool & warm season (blue & cheat gr vs AGSP) < Can I use densiometer for canopy cover > Shrubs ocular or dimensional analysis. Herbaceous ocular or mechan. # of samples must be adequate to represent site. Tree DBH < from circ plots >. DGH of shrubs. < % g.c. of herb > Record of Tree Fall



Questions:

Bait: yes or no, oats or peanutbutter  
(10) <sup>Many</sup> different habitats or multiple sites of several habitats  
Live traps, snap traps, pit traps  
Traps equally spaced or several per location  
Random placement of traps or look for runways

March 20, 1986

JOBS

Haying

Firewood

✓ Cookhouse Ceiling

✓ Paint interior - Lab, Arlows

✓ Finish Barn ends & hay fork

✓ Airstrip Drainage

✓ (Rush Cr Irrigation)

✓ (Big Cr Airstrip Erosion Control)

Linseed cabins

< Plumb Lab >

✓ (Cookhouse shower facility)

✓ ~~Reseed pasture~~

? Fence in W pasture

Brochure  
P.C.

- \* stat. presentation
- \* sm mamm. proposal
- \* rate GIS's

## TAYLOR RANCH SLIDES

(1)

- T.R. FLD. STN. ADMINISTERED BY WILDER RES. CENTER AT U.F.I
- T.R. ALONG B16 CR. IN THE MIDDLE OF THE RNR - 2.2<sup>+</sup> MIL. AC.
- METHODS TO GET TO T.R. - FLY, HORSEBACK, BACKPACK...  
PAK STRINGS AND PLANES PREFERED METHODS.
- THERE ARE <sup>11</sup> 15 BUILDINGS ON THE TAYLOR RANCH COMPOUND, <sup>NOT INCLUDING O.H.'S</sup>  
THE LAB BUILDING IS THE OLDEST DATING BACK TO TURN OF  
CENTURY. TAYLOR CABIN BUILT IN EARLY 30's. THE FACILITY  
CAN ACCOMODATE UP TO 15 VISITORS AT ONCE.

(2)

- RESEARCH HAS BEEN CONDUCTED OUT OF TAYLOR RANCH SINCE THE LATE 60's. THE FIRST WORK WAS DONE BY MAURICE HORNOCKER ON COUGARS
- MAURICE LOOKED AT MOUNTAIN LION PREDATION UPON MULE DEER AND ELK IN THE BIG CREEK COUNTRY
- M.H. STUDIED THIS LION POPULATION TO ASSESS ITS IMPACT ON BIG GAME. HE FOUND THAT DEER AND ELK WERE LIMITED IN NUMBER MORE BY WINTER FOOD SUPPLY THAN PREDATION.
- FOLLOWING M.H., A DOCTORAL STUDENT JOHN SIDENSTICKER <sup>ORGANIZATION AND</sup> LOOKED AT THE SOCIAL DISTRIBUTION OF LIONS USING RADIO-TELEMETRY

(5)

- IN THE SAME ERA AS THE LION WORK, JIM CLAAR DID A MASTERS THESIS ON THE CORRELATIONS OF UNGULATE FOOD HABITS AND WINTER RANGE CONDITIONS.
- IN THE MID 70'S JIM BENNETT STUDIED THE ECOLOGY OF BIGHORN SHEEP.
- MORE RECENTLY MASTERS RESEARCH WAS DONE BY GREG HAYWARD ON HABITAT PARTITIONING AMONG 6 FOREST OWL SPECIES. DURING THE SAME TIME SUE TANK ASSESSED SONG BIRD POPULATIONS.
- DURING THE LATE 70'S THERE WERE ALSO SEVERAL SENIOR SUMMER HONORARIUMS.

• CURRENTLY THERE ARE THREE RESEARCH PROJECTS OPERATING OUT OF TAYLOR RANCH.

• GARY KOEHLER IS WRAPPING UP A FOUR YEAR STUDY ON THE ECOLOGY OF BOBCATS IN THE RNR

• OVER THE PAST  $3\frac{1}{2}$  WINTERS GARY AND HIS ASSISTANTS HAVE RADIO INSTRUMENTED 30 BOBCATS, 10 COYOTES AND 9 MOUNTAIN LIONS.

- THEY ARE LOOKING AT BOBCAT POPULATION DENSITY AND DISTRIBUTIONS (TERR.), BOBCAT REPRODUCTION, CAUSES OF MORTALITY AND COMPETITION WITH OTHER PREDATORS.

DR.

- FRANK LEONHARDY IS CONDUCTING AN ARCHEOLOGY STUDY ASSESSING SETTLEMENT AND SUBSISTENCE PATTERNS OF INDIANS IN THE SALMON RIVER MOUNTAINS.
- FRANK'S BEEN WORKING ON THE STUDY FOR 3 SUMMERS. THE LAST TWO YEARS HE'S BASED OUT OF T.R. WHERE HE'S DIRECTERED A FIELD CREW.
- FRED THOMAS HAS BEEN THE GRADUATE ASSISTANT ON THIS PROJECT WITH THE THEME OF HIS THESIS BEING - SHEEP AS A RESOURCE BASE FOR SUBSISTENCE.
- ROBBIN JOHNSTON IS ANOTHER GRADUATE STUDENT ASSISTING ON THIS PROJECT.



(6)

- LAST SUMMER ('84) FRANK & CREW SPENT TWO WEEKS AT COYOTE SPRINGS - (20 mi. north of T.R. and at 8,000' ft. elevation) WHERE THEY DID SOME EXCAVATION PLOTS AT AN INDIAN HUNTING CAMP. PACK STOCK USED TO GET THERE
- THERE FINDS WERE NOTEWORTHY, AMONG WHICH WAS A MCKEAN ARROWHEAD DATING BACK -
- CONSIDERING THE MOSQUITOE INFESTATION THE TRIP WAS VERY PRODUCTIVE... BESIDES BEING OFFERING SOME PRESTING VIEWS OF THE MIDDLE FORK BREAKS AND PADOOSE LAKE.

(7)

SEVERAL

- WHILE IN THE HIGH COUNTRY HOLLY ADDED ~~50~~ PLANTS TO THE RANCHES COLLECTION - SHE HAS COLLECTED AND KEYED OUT OVER 150 PLANTS TO DATE.
- THIS JAN. (85) HOLLY BEGAN A MASTER'S RESEARCH PROJECT LOOKING AT THE BEHAVIOR OF BIGHORN SHEEP, DEER, AND ELK ON THE CLIFF CR. WINTERING AREA.
- SHE'LL BE LOOKING TO SEE IF THE SPECIES BEHAVE DIFFERENTLY WHEN TOGETHER OR SEPERATE.
- OUR JOB OFFERS A UNIQUE BLEND OF RESEARCH AND MANUAL LABOR. OUR SEVEN HEAD OF STOCK HAVE TO BE SHOD AND RESHOD 3 OR 4 TIMES A YEAR.

- LAST SUMMER A MULE SKINNER (CARL SCHAUSS) CAME IN AND HELPED US TRAIN THE RANCHES MULES TO BE A TEAM.
- WE PUT UP WINTER FEED WITH THE MULES... MOWING - RAKING
- WE GOT LOTS OF HELP FROM THE TAYLOR CREW, MAKING THE TASK EASIER.
- THE MULE TEAM IS ALSO USED TO BRING IN WINTER WOOD AND COMPACT SNOW ON THE AIRSTRIP WITH A ROLLER SO THE SKI PLANE CAN SAFELY LAND DURING WINTER MONTHS.
- MAIL DAY IS A BIG EVENT AT TAYLOR. THE MAIL COMES EVERY WED. IN THE SUMMER AND TWICE MONTHLY IN WINTER.

- IN THE FALL OF '82 THE WILDERNESS RESEARCH CENTER SPONSORED A WORKSHOP. THIS CREW WAS PART OF THAT GATHERING AND THEY CAME TO TAYLOR ON A FIELD TRIP - THEY WERE ~~EVERY~~ <sup>FROM</sup> EVERY CORNER OF THE U.S.
- LAST SPRING WE HOSTED ANOTHER FIELD TRIP - THIS TIME A GROUP OF 28 HIGH SCHOOL STUDENTS & TEACHERS FROM NAMPA HIGH. THEY WERE MEMBERS OF THE SCHOOLS SCIENCE CLUB. THEY SPENT A DAY AND NIGHT AT TAYLOR EN ROUTE TO THE "FYING B" ON THE MIDDLE FORK. THEY BACKPACKED FROM CABIN CR. TO THE "B". AT TAYLOR GARY TOLD THEM ABOUT PREDATOR ECOLOGY AND HOLLY FILLED THEM IN ON SHEEP ECOLOGY.

(10)

- ED AND CHARLENE TOURED CLOSE TO 60 MILES OF BACK COUNTRY WITH US VIA HORSE LAST SUMMER.

(MICHAEL)  
~~MIKE~~

- MIKE FROME SPENT 10 DAYS WITH US LAST WINTER. WE HAD A GOOD TIME DISCUSSING WILDERNESS ISSUES AND BACKPACKING TO GARY'S WATERFALL CAMP.
- THE BIGHORN BRIDGE SPANS A GORGE ON LOWER 1316 CR. I BELIEVE A COMBINATION OF PACKSTOCK AND HELICOPTER POWER MOVED THE BRIDGE MATERIAL TO THIS SITE.