

The Role of Social Science in Natural Resource Management

CSS 235
Prof. Ed Krumpe

“Conservation is a social endeavor...”

- Conservation/Preservation
- Resource allocation
- Environmental stewardship
- Ecosystem management
- Conservation biology
- Sustainable ecosystem management
- Integrated resource management...

1

The most complicated species to study

- Constantly scheming & changing behavior
- Self-centered, pack-oriented
- Almost infinitely adaptable yet p among sub-populations
- Bent on control of surroundings/
- Quarrelsome & ferocious fighter.
- Herd animal that roams in small kinship units
- Little respect for homerange--troublesome subadult wanderer
- Occasionally mate for life



2

Very difficult to study...

- Can't radio-collar them
- Can't use capture/mark/recapture techniques
- Can't extract DNA
- Can't raise in laboratory settings or captivity
- Constant mobility & changing exterior markings
- Can't implant GPS or PIT tags
- Can't harvest & dissect at various life cycles
- Can't always trust to tell the truth!

3

Social Science Framework

1. Individuals: act, behave, perceive, believe, value, make decisions, support/oppose
2. Social Groupings: act, behave, perceive, believe, value, make decisions, support/oppose
3. Individual and Social Norms influence behavior
4. Policy, regulation, laws, politics, governance
5. Perceptions = Reality -- influenced by more than raw facts & figures

4

“What does Social Science research do?”

- Documents “what exists”
 - Socio-demographic characteristics
 - Employment/spending habits
 - Numbers of users . . . types of different users . . .
- Examines the Relationships Between Factors
 - Does a correlation exist between . . . ?
 - What are the similarities & differences between...people/communities/groups?
 - What was the effect of a policy on . . .

5

“What does Social Science research do?”

- Analyze Values, Beliefs, Attitudes, Preferences and Perceptions
- HOW?
 - Surveys
 - Interviews
 - Focus groups
 - Observation
 - Archival data

6

“What does Social Science research do?”

- Help Design Decision Processes
 - Who should be involved? (stakeholders)
 - What process & techniques should be used?
 - How do you communicate outcomes?
- Evaluate Decisions, Management Actions, Intended & Unintended Consequences
 - Which alternative is most/least acceptable...?
 - Who will be affected & how?

8

“What does Social Science research do?”

- Analyze & Understand Political & Institutional Structures
- Understand Indigenous Knowledge & Culture
- Assess Social and Economic Impacts
 - What effects will management plans have on communities & local economies?
 - What are the economic impacts of mill closures, hunting/fishing regulations, forest fire smoke management, endangered species . . . ?

9

“What does Social Science research do?”

- Evaluate relationship of commodity values with non-timber, non-market, amenity values, and ecosystem services values
- What values accrue to a region from designating an area as a forest, park or wild & scenic river?
 - What is the economic value of grazing, hunting, fishing, camping ...?
 - Do communities benefit or not from ...?
 - What is the “existence” or “bequest” value of a protected area (knowing it’s there, pass to future generations)?

10

How do we study human critters?

- Direct – “Ask them . . .”
 - Surveys
 - Interviews
 - Focus groups
 - Workshops
- Indirect – “tracks & traces”
 - Observation (behavioral setting or focus animal)
 - Secondary Data Analysis (archives, news, census data, economic & market data, case studies, policy analysis . . .)

7

Survey Research Methods

- Standardized list of questions & responses to collect data
- Sample Population
 - (stratified, random, non-biased, representative)
- Administered to whom, when, how long?
- Challenges (phone, saturation & fatigue, “fake” surveys for marketing & politicians, sampling frame, internet access . . .)

11

Questionnaires

- Questionnaire Design
 - Open-ended questions / closed-ended questions
 - Non-biased, unambiguous, easy ...
 - Pilot testing
- Delivery method / Return method
 - On-site vs Off-site vs Home
 - Paper, Internet, Telephone, Touch-screen?
- Cost?



Elk Hunting in Idaho



12

Interviews

- “Let’s just ask them!”
- Interviews ask predetermined, non-biased questions to one individual at a time.
- 3 types –
 - Informal, Semi-structured, Structured
- How to record the data?
 - Interviewer data sheet, voice recording
- Who, and Where, and When to interview
- How to analyze? Legal limitations?

13

Interviews: “Focus” Groups & Workshops

- A group of 8 to 12 individuals who respond & discuss predetermined questions
- Identifies a broad range of ideas and concerns
- Provides in-depth understanding of people’s thoughts
- Time-consuming, recording & analyzing results
- May allow for biases to occur



14

Secondary Data Analyses

- News Media
- Public Records
- Internet: blogs, tweets, twitter, etc.
- Photographic record
- Census data
- Maps & aerial photos
- Legal – laws, regulations, code
- Other scientific data

15

When should you collect social science data?

- Duh – before you make resource decisions
- Not so fast...
- On-going—during decision making process
- Afterwards—was the process followed?
- Afterwards—was the decision implemented?
- Afterwards—did it accomplish anything?



16

What is the future of Social Sciences in Natural Resource Management?

- National mandates for interdisciplinary research
- Legal requirements – NEPA, EIS . . .
- Triangulation—looking at a problem from multiple research perspectives
- Higher Education
- An exciting future

* * * *