Chapter 22

Measuring the Human Dimensions of Recreational Fisheries
22.1 Importance of human dimensions data

- Help make management decisions
- Help make informed decisions
- Input for peoples involvement with fisheries
Fisheries management actions

- Manipulation of biota
- Manipulation of the physical environment
- Manipulation of the people
Human dimensions studies

- Measure peoples opinions and preferences *(Yes or No)*
- Peoples opinion on management objectives
- Likely effects of decisions on people
Human dimensions studies (cont.)

- Political and social acceptability of actions
- Choice of techniques that are
  - Acceptable
  - Effective
  - Desirable to human outcomes
Types and Characteristics of Data Collection Techniques

• Selection of type depends on:
  – Research objectives
  – Data requirements
  – Characteristics of population to be studied
  – Time, staff, and funds available
Document review and content analysis

- Local newspapers
- Letters received by management agency
- Brochures from interest groups
Content analysis

- Collect data from documents
- Organize data into major themes and categories

<table>
<thead>
<tr>
<th>Genus</th>
<th>Age</th>
<th>Sex</th>
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<tbody>
<tr>
<td>Micropterus</td>
<td>2+</td>
<td>Male</td>
</tr>
<tr>
<td>Amia</td>
<td>3+</td>
<td>Female</td>
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<tr>
<td>Lepomis</td>
<td>1+</td>
<td>Male</td>
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Document review

- Perceptions on fisheries management programs
- Low cost
- May not represent entire population
Individual interviews

- Allows for exchange of information
- Both closed and open ended questions can be asked
- Can be used on low literacy individuals
Individual interviews (cont.)

• Costly
• Require that interviewer and interviewee share language
• Interviewer has to be present long hours

I really need to learn French!
Group interviews

- 8-12 participants
- Sessions for two hours
- Exchange of information
- Provides many insights
Mail surveys

- Allow collection of detailed data
- Gives interviewers time to reflect on answers
- Costs vary depending on scope of study
- Questions should be very clear
Telephone surveys

- Interaction in interview
- Better overall participation
- No time for personal reflection
- Less expensive than personal interviews
Direct observation

- Time intensive
- Requires excellent observation skills
Characteristics of data

• Qualitative- provides depth and detail for small groups
• Quantitative- standardized measures for larger groups

Qualitative:
Lake Chicot fishermen prefer X brand rods and reels. The live bait used most often was minnows. The lure used most often was a spinner.

Quantitative:
Arkansas fishermen use both X and Y brand rods and reels.
Types of Questions

- Closed ended questions - choose answer from options
  - quantitative
- Open ended - answer in own words
  - qualitative
Characteristics of data (cont.)

- Cross sectional data - compare data from different stakeholders
- Longitudinal data - data from the same stakeholders
22.2 Theoretical framework

- List of concepts to be measured
  (Time, number, species, range)

- Predicted relationships
  (eg. Double time = triple catch)
Immediate information needs

- Research driven by problems
- Who?
- Where?
- How much?
Use and Expansion of Existing Models and Theory

- Proactive management - solve problems before they arise
Management activities limited by

- Time
- Money
- Staff resources
22.3 Design/Implementation - Human Dimensions Study

- Theoretical framework provides the foundation
- Identify the specific study objectives

<table>
<thead>
<tr>
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<th>OBJECTIVES</th>
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<td>1.</td>
<td>?</td>
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<td>2.</td>
<td>?</td>
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<td>3.</td>
<td>?</td>
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Selection of the population of interest

- Who is likely to be affected by decisions?
- Whose values should be considered?
- Whose opinions should be included?
Sampling considerations

- Size of sample
  - Desired level of accuracy and precision
  - Desired rate of response
  - Expected variability in responses
  - Resources available for the study
Contact information can be obtained through

• Fishing license records
• Boat permit registration
• Youth groups
• None is a true representation of the public
Development of the instrument

• Designing instrument takes time
• List concepts of interest
• Narrow down by ordering, clarifying and wording
Instrument should be

- Clear
- Concise
- Understandable to research participants
Each question should

• Pertain to single concept
• Relevant to research objectives
• Precise
• Neutral (not leading)
Good questions

• In complete sentences
• Carefully defining terms
• Meaningful response categories
• Avoid impression that researcher would think negatively of certain answers
Question structures

- Checklists
- Likert format agreement scales
- Semantic differential lists
- Rating questions
- Ranking questions

Q. Do you think crappie should be stocked every year?

Example of a Likert Scale question: 1 Strongly Disagree, 2 Moderately Disagree, 3 No Opinion, 4 Moderately Agree, 5 Strongly Agree
Mail survey questionnaires

- Effectiveness influenced by
  - Population studied
  - Interest in the research topic
  - Ease of completing questionnaire
Factors affecting questionnaire completion

- Size of lettering
- Length of survey
- Complexity of questions
- Time span of memory recall required

Question 1. vs. Question 1.
Telephone survey questionnaires

- Permit smooth flow during interview
- Should have introductory statement
Telephone survey questionnaires (cont.)

• Easy to answer at the beginning
• Screening questions at beginning
• Difficult/confidential left to end

How many fish did you catch last week?

Could you give me your opinion on....
Individual and group interview protocols

• Begin with description and purpose of study
• Open and closed ended questions
• Tape recorder and video cameras can be used
Instrument quality considerations

• Validity
  – Depends on definitions
  – Clear, careful wording necessary
Approaches to Assess Validity

• Pragmatic validation
  – How well measure enables researcher to predict behavior

• Construct validation
  – Infers validity by assessing relationship with other measures
Approaches to Assess Validity (cont.)

• Discriminant validity
  – Extent to which it is unrelated to measures of theoretically distinct concepts

• Face validity
  – Intuitively obvious relationship between measure and the concept related
Reliability

- Consistent results for same group
Objective by question matrix

- Designed to address the specific concept area/objective
Pretesting

- Content and structure is consistent with research objectives
Participation rate

- Not all people contacted participate
- Self-selection may result in "nonrespondent bias"
Implementation of the study

• Legal and procedural concerns
  – Assure respondent confidentiality
Implementation considerations

- Timing
- Coding considerations
- Nonrespondent considerations
22.4 Tools for measuring the human dimension

- Computer software
  - Various new software