Human-Wildlife Interactions and the Potential for Conflict Index

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Study Objectives

- Determine acceptability of mgmt actions in scenarios varying by
  - severity of human-wildlife interaction
  - species involved

  using the
  Potential for Conflict Index
  Analysis of Variance

Hypotheses

- Acceptability of mgmt action will vary by:
  1. Species
     (Raccoons, Bears, Mountain lions)
     ("Pest" vs "Charismatic Mega-fauna")
  2. Severity of human-wildlife interaction
     (Presence, Nuisance, Human death)
- Species involved & severity will *interact* to influence acceptable mgmt action

Introduction

- Effective wildlife management necessitates understanding public acceptability of management actions
- Acceptability can vary by:
  - species
  - severity of interaction
- Generalizing the public's opinion about certain species facilitates acceptable, efficient management
- One such generalization is
  "Charismatic Mega-fauna"
  - large-bodied, enigmatic species
  - attract public sympathy, support, respect

Scenario Example

Scenario 3

- **Species:** Bear
- **Action:** Kills Human

How acceptable or unacceptable is it for managers to take the following actions?

Management Action	Highly Unacceptable						Highly Acceptable
Do Nothing	-3	-2	-1	0	1	2	3
Monitor the situation	-3	-2	-1	0	1	2	3
Educate the public	-3	-2	-1	0	1	2	3
Frighten the bear away	-3	-2	-2	0	1	2	3
Capture and relocate the bear	-3	-2	-1	0	1	2	3
Destroy the bear	-3	-2	-1	0	1	2	3

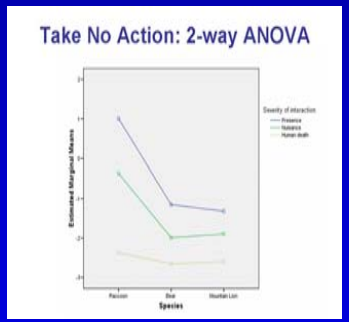
Methods

Student survey
- Colorado State Univ. (n = 238)
- Oregon State Univ. (n = 126)

Rated acceptability
6 mgmt actions for 9 scenarios

Species	Scenario
Raccoon	Presence
Raccoon	Nuisance
Raccoon	Kills Human
Bear	Presence
Bear	Nuisance
Bear	Kills Human
Mtn Lion	Presence
Mtn Lion	Nuisance
Mtn Lion	Kills Human

Take No Action: 2-way ANOVA



Destroy: 2-way ANOVA

Management Strategy: Take No Action

Management Strategy: Destroy Animal

Analytical Methods

Potential for Conflict Index

- Simultaneously presents:
  - Average tendency (mean)
  - Shape of a distribution (intensity)
  - Agreement or consensus
- Displayed graphically for maximum understanding
- Enables managers to determine acceptability of action and the degree that the public is divided over its acceptability

PCI Measurement Requirements

-3	-2	-1	0	1	2	3
Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neutral	Slightly Acceptable	Moderately Acceptable	Highly Acceptable

Response scale

- Balanced scale with equal number of response options on either side of "Neutral" point
- Number of response options can be 3, 5, 7, or 9 (typically 5 or 7)
- Numerical ratings must be assigned in ordinal fashion with center point given value of 0

- **Index range: 0 (no conflict) to 1 (greatest conflict)**
- **Greatest potential conflict (PCI = 1) occurs with bimodal distributions:**
  - 50% rate mgmt. action as "Highly Unacceptable"
  - 50% rate mgmt. action as "Highly Acceptable"
  - 0% are "Neutral"
- **No conflict (PCI = 0) occurs when:**
  - 100% rate mgmt. action as "Highly Unacceptable" OR
  - 100% rate mgmt. action as "Highly Acceptable" OR
  - 100% are "Neutral"

Conclusions: Take No Action

- For "presence" situations
  - Acceptable for Raccoons
    Less agreement
  - Unacceptable for Bears & Mountain Lions
    Large agreement (small bubbles)
- For "nuisance" situations
  - No opinion for Raccoons
    Less agreement
  - Unacceptable for Bears and Mountain Lions
    Large agreement (small bubbles)
- For "human death" situations
  - Unacceptable for all 3 species
  - Large agreement (small bubbles)

Conclusions: Destroy Animal

- For "presence" / "nuisance" situations
  - Unacceptable to kill all 3 species
    Large agreement (small bubbles)
- For "human death" situations
  - Acceptable to kill Raccoon
    Moderate agreement (medium bubbles)
  - Mixed reactions for killing
    Bears & Mountain Lions
    Less agreement (large bubbles)

Discussion

- "Species" & "Severity of Interaction" influences public acceptability of management actions
- Bears and Mountain Lions ("Charismatic Mega-fauna") viewed differently

Summary

- PCI illustrates variability graphically
- ANOVA empirically contrasts variability
- For both dependent variables interaction effect evident
- Managers need to consider both
  - Species involved in human-wildlife situations
  - Severity of the interaction

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