Protecting Resources through Communication and Compliance

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QUEST Webinar
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Protecting Fish Stocks

• **Primary Tool: Fishing Regulations**
  (e.g., gear restrictions, closures, catch limits), only effective if followed

• **Rely on:**
  • Education/outreach
  • Observers
  • Reporting
  • Enforcement
Compliance with Regulations

• 165th Western Pacific Regional Fisheries Management Council (2016) recommended the Fishery Ecosystem Plan Objectives include “Promote Compliance”
  • Understand factors that result in non-compliance
  • Develop ways to increase compliance with fishing regulations
  • Ensure regulations written and implemented to be easy to follow
• Objective 4 in Draft Fisheries Ecosystem Plans
• Recurring theme in discussions with Hawaii Division of Aquatic Resources
Protected Species Management

FISHING AROUND SEA TURTLES
ACCIDENTAL TURTLE CATCH
It’s OK to Help!

SAFETY FIRST
If safe to help

REEL-IN turtle with care
HOLD by shell / flippers
CUT line close to hook
RELEASE with no line attached

Remember to:
- Check bait after every nibble
- Use barbless circle hooks to reduce injuries
- Clean your catch away from turtles

For Injured or Dead Turtles Call:
(888) 725-3730
For more information visit: www.fla.noaa.gov/50/get_safe.htm

NOAA Fisheries
U.S. Department of Commerce | National Oceanic and Atmospheric Administration | NOAA Fisheries | Page 4
Past PIFSC Research

- **Hawaii Longline Fishermen’s Experiences with the Observer Program (2007)**
  - Observer program has led to better estimates of interactions between longline fishing and species at risk
  - Concerns were with the overall program as a form of enforcement
  - Lack of trust in monitoring
  - Lack of adequate reimbursement
  - Variation by ethnic group
Past PIFSC Research

• Fisher perceptions and interactions with protected species (2015)
  • Cetaceans (false killer whale)
    • Fishers may not be able to accurately id species
    • Fishers try to avoid interactions and communicate with each other when cetaceans are present
  • Monk seals
    • Interactions are rare
    • Protection → habituation
    • Protection → feeding
    • Fear of prosecution/closure
    • Monk seal as symbol
Building Capacity

- Science of Science Communication
  - Risk Communication
  - Conservation Marketing

- Science of Compliance
  - Conservation Marketing
  - Conservation Criminology

Figure from Bennett, N.J. et al., 2017, Conservation Social Science
Science of Science Communication

• Myths of Science Communication:
  • The information deficit model is effective (if we just gave people the facts, they would think/behave like us)
  • You need to “dumb down” the science to communicate effectively
  • It is straightforward to create communication messages that result in widespread behavior change
Science of Science Communication

• Aligning Goals with Communication Approach
  • Education = Awareness and Knowledge
  • Persuasion = Beliefs and Attitudes
  • Risk Communication = Informed judgments about risks to health, safety, and the environment
  • Conservation Marketing = Pro-environmental behaviors

• Common theme: Requires understanding how people seek and process information, identify trusted sources, perceive risks and benefits
Science of Science Communication

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  • **Risk Communication** = Informed judgments about risks to health, safety, and the environment
  • **Conservation Marketing** = Pro-environmental behaviors

• **Common theme**: Requires understanding how people seek and process information, identify trusted sources, perceive risks and benefits
Risk Communication

• **Problem Framing**
  • Tells people what to pay attention to and how they should think about it

• **Risk perception**
  • Expert vs. layperson perceptions of risk
  • Focus on the “outrage” not the “hazard”

• **Risk communication**
  • Empower people to feel they can make informed judgments about risk
  • Build capacity for self- and societal- efficacy

• **Social amplification of risk**
  • Agenda setting, media framing, and “newsworthiness”
  • Utilize the power of story
Problem Framing

- Framing as a concept is often examined in public opinion and media communication

- Frames act as lenses or filters through which people interpret and process information

- Frames call attention to certain elements of an issue and direct attention away from other elements

- **Framing tells people what to pay attention to and how they should think about it**

Entman, 1993
Impacts

EVENTS or INTERACTIONS

Recognized = EFFECT

Important = IMPACT

Not Recognized

Not Important

Organ et al., 2006
Risk Perception

• “People respond to the hazards they perceive” (Slovic et al. 1979)

• Experts and the public perceive risk differently
  • **Experts**: risk = assessed risk \( (\text{hazard}) \)
  • **Public**: risk = hazard + outrage (Sandman 2012)

• **Cognitive** (beliefs about probability of causing harm) and **affective** components (emotions)
Risk Perception: Risk Profiles

(Modified from Slovic et al., 1979)
Social Amplification of Risk

• “Information processes, institutional structures, social-group behavior, and individual responses shape the social experience of risk.” (Kasperson et al 1988 p.181)

• **Media agenda-setting:** The media “may not be successful much of the time in telling its readers how to think, but it is stunningly successful in telling its readers what to think about.” (Cohen 1963 p.13)

• **Newsworthiness:** conflict, drama, well-understood story themes, recognizable personalities, physical proximity to the reader, timeliness, or novelty (Price and Tewksbury 1997)
Aquaculture Programmatic Environmental Impact Statement

• Senior project for undergraduate UH student in Global Environmental Sciences program

• Content analysis of news media and public comments related to Aquaculture PEIS
Aquaculture PEIS

- Initial coding of articles and comments complete

![News Sources vs. Public Comments](image)
Aquaculture PEIS

• Initial coding of articles and comments complete

Types of Environmental Risk

- 25% antibiotics, disease
- 21% chemical, waste production
- 23% fish escaping
- 20% impact on other species
- 11% wild stocks for fish feed
Aquaculture PEIS

Next Steps:

• Qualitative comparison between articles and comments

• Qualitative analysis of concerns and tone

Will be completed in spring 2018, in time to inform the PEIS
Conservation Marketing

- Builds off of work on human-wildlife interactions at NPS
- Adoption by outreach groups in Hawai‘i

Regulatory Sign

Behavior-Based Messaging

Photos courtesy
Katie Abrams
Conservation Marketing

• Desired outcome is behavior
• Borrows strategies from advertising, “product” is pro-environmental behaviors (social good)
• Founded on social science research to identify target audience(s) and their motivations, as well as strategies for evaluation

Key Principles:
• Make it enjoyable: What’s in it for me?
• Make it easy: Is it do-able to the target audience?
• Make it popular: Are others like me doing it?
Conservation Marketing

Step 1: Select Behaviors

- Diagnostic questions:
  - What are the non-divisible end-state behaviors?
  - Which are more impactful, higher probability of adoption, lower penetration (fewer people already doing it)
Step 1: Select Behaviors

“Behavior” (suite of behaviors)

• Release hooked turtle

• Non-divisible behaviors
  • REEL-IN with care
  • HOLD by shell/flippers
  • CUT line close to hook
  • RELEASE with no line attached

• End-state behaviour
  • Release turtle with no line attached
Step 2: Uncover Barriers & Benefits

• Diagnostic questions:
  • What is impeding people from engaging in the behaviour?
  • What will motivate them to act?

Select Behaviors

Uncover Barriers & Benefits

Develop Strategy

Pilot Strategy

Implement Broadly & Evaluate
Step 2: Uncover Barriers & Benefits

- Drivers of barriers and benefits may be
  - Internal
  - External
Step 3: Develop Strategy

- Diagnostic questions:
  - Do you want to encourage or discourage behaviors?
  - How can you best affect the identified benefits and barriers?
### Step 3: Develop Strategy

<table>
<thead>
<tr>
<th>Specific Behaviour</th>
<th>Barriers</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encourage</td>
<td>![Down Arrow]</td>
<td>![Up Arrow]</td>
</tr>
<tr>
<td>Discourage</td>
<td>![Up Arrow]</td>
<td>![Down Arrow]</td>
</tr>
</tbody>
</table>
Step 3: Develop Strategy

- Communication
- Commitment
- Prompts
- Norms
- Incentives/Disincentives
- Convenience
Steps 4 & 5: Pilot, Implement, Evaluate

• Diagnostic questions:
  • How will success be measured?
Reducing mortality of oceanic whitetip sharks

- UH M.S. student project, started Fall semester 2017
- Knowledge, attitudes, practice of fishers
- Information sharing patterns
- Funded by National Bycatch Reduction Engineering Program, as part of a shark tagging proposal
Reducing mortality of oceanic whitetip sharks

- Interviews in progress
- Importance of trust/respect building for study validity and collaborative solution seeking
- Fishers not interested if strategy doesn’t help them
How can we reduce the impact of pelagic sharks on fishermen, and vice versa?

- Interviews in progress
- Importance of trust/respect building for study validity and collaborative solution seeking
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Challenge: Regulatory to Behavior-based

Key Principles:

• **Make it enjoyable:** What’s in it for me?

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Science of Compliance

• Overlap with science of science communication

• Focus on behavior

• Emerging field of Conservation Criminology
  • Borrows from fields including law enforcement
  • New techniques for collecting data about sensitive topics
Conservation Criminology

- Interdisciplinary
- Understanding the context of the crime (e.g. understanding poaching vs. poachers)
- Interventions highly tailored to the situation (problem-oriented policing, situational crime prevention)

- Environmental Resilience
- Biodiversity Conservation
- Secure Livelihoods

Risk & Decision Science

Natural Resource Management

Criminology
Conservation Criminology

- Drivers of non-compliance
  - e.g., Intentional vs. unintentional
- Motivations for non-compliance
  - e.g., Direct vs. indirect personal gains
- Drivers of compliance and cooperation
  - e.g. Regulations, economic incentives, communication

- Requires specialized data collection techniques to avoid self-incrimination, ensure accuracy of results
  - e.g. randomized response technique, indirect questioning
Seascape of Compliance in the Pacific Islands

- Objectives:
  - Identify the range of compliance issues in the region by management type and priority.
  - Identify and plan pilot project to address an issue that represents the most frequent type of compliance issue.
    1. High priority for Pacific Islands Regional Office and Council
    2. Represents compliance category with multiple needs for the region
    3. Politically and logistically feasible
Seascape of Compliance in the Pacific Islands

• Conducting interviews with PIFSC, PIRO, Council, and key stakeholder representatives

• Rather than specific topics, hearing more about criteria: can be affected by management, managers will commit to follow-through

• Commercial fishing thought to be fairly well-covered, most to gain from non-commercial fishing, interactions along shoreline with multiple stakeholders
Ongoing consultation for Protected Resources

- Toxoplasmosis and At-large Cat Technical Working Group
- False killer whale recovery planning
- Editing monk seal, sea turtle, spinner dolphin outreach materials
- Fishing around seals and turtles steering committee

→ Regional Office and Science Center have discussed a coordinated communication and outreach strategy for protected resources
Discussion

• Many conservation education and outreach efforts are actually intended to result in behavior change
• Communication and Compliance are very specialized applied social science disciplines
• Both are gaining attention in conservation research and practice
• Interest and support from Pacific Islands Regional Office and Council
Questions?

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Citations


