

# New and Improved! Revisions to the ANSTF Risk Analysis Review Process

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# The Original

- Aquatic species
- Risk assessment
- Risk management

# Major Changes

- Any species
- Data quality
- Uncertainty
- New technical concepts

# Major Changes

- Planning
- Stakeholders
- Risk communication / risk perception
- Examples
- Peer review

# Expert Elicitation

- Primarily for risk assessment
- Ecosystem characteristics
- Alien characteristics
- Probability of establishment/spread
- Ecological consequences

# Stakeholders

- Primarily risk management
- How will it affect them?
- Human consequences
- Alternatives
  - Prevention
  - Control
  - Restoration

# New Technical Concepts

- Modeling
- Propagule pressure
- Spatial and temporal scale
- Biological package

# Modeling

- Can compare potential invader's habitat needs with ecosystem of concern
- Can compare life histories
- Can make predictions based on alien's behavior in native habitat



# Propagule Pressure

- If:
  - Greater number of introductions
  - Higher rate of introductions
- Expect greater success  
(establishment)

# Spatial / Temporal Scale

- What area are we concerned with?
  - Large or small
  - Continuous or discontinuous
  - Unique habitat
- Over what time?
  - Long or short term
  - Frequent or infrequent introductions

# Biological Package

- Organisms may carry additional organisms such as parasites or disease agents

# Planning

- Decision to be informed
- Decision context
- Management objectives
- Management options
- Information needs
- Who needs to be involved?

# Choose Your Experts

- Example selection criteria
  - Area of expertise
  - Publication record
  - Recommended by peers
  - “Unbiased”
  - Plays well with others?

# Frame the Questions

- Provide context
- Be as specific as possible
- Make sure questions are answerable
- What data are already available?
- Who else will use the risk-assessment data?

# Questions: Probability of Establishment

- Pathway
- Transport/release
- Establishment
- Spread

# Questions: Consequences of Establishment

- Economic
- Environmental
- Perceived (social)



# Choose Your Method

- Consensus
- Interview
- Survey

# Consensus

- Must have a facilitator
- Can be expensive
- Can be time-consuming
- One individual may dominate
- Group learning

# Interview

- Can be less expensive
- Can get more people
- Can be quicker
- Each opinion is equal
- No group learning

# Survey

- Least expensive
- Quickest
- Each opinion is equal
- No group learning

# Engage Interested Parties

- Strive to:
  - Include all known interested groups
  - Actively seek all opinions
  - Specifically ask about interest in the outcome – values, worries, etc.

# Engage Interested Parties

- Frame questions
- Get a facilitator
- Offer different input options/formats
- Keep asking ... and ask if you've left anything out

# Uncertainty

- How robust are the data?
  - Completeness
  - Representativeness
  - Quality
  - Quantity
- Do they answer the questions we asked?

# Risk Management

- Consider:
  - Risk assessment results
  - Available mitigation techniques
  - Resource limitations
  - Public perceptions
  - Social consequences
  - Benefits and costs



# Risk Management

- Continue communication:
  - With interested parties
  - Between risk assessors and risk managers
- Match options with risks
- Balance resource protection and utilization

# Peer Review

- Develop criteria
  - Expertise, e.g.,
    - Publication record
    - Recommended by other experts
  - Representative
  - Potential biases acknowledged
- Frame questions

# Final Analysis

- Reason for assessment
- Pathways, organisms
- Responses to risk managers' ?s
- Summary of methodologies
- Risk and mitigation
- Responses to external reviewers