**Skill Check Week 4: Alternatives & Consequences Step of PrOACT**

**Course:** NAT\_R 8001 Decision Analysis for Research and Management of Natural Resources

**Instructor:** Brielle Thompson

**Instructions:**

Consider the following decision problem:

* **Decision maker**: Refuge manager who is also interested in stakeholder’s perspectives & appeasing the royal crown
* **Trigger**: Eagle population is nearly extinct in Genovia
* **Actions**: Reintroduction and habitat management
* **Constraints**: Budget
* **Consideration**: Nearby sport anglers (whose license sales fund conservation) like to fish on eagle prey
* **Frequency and Timing**: One time decision
* **Scope**: In two potential refuges in the kingdom (Refuge A or B)
* **Problem class**: Multiple objective with uncertainty

Your fundamental objectives are:

* Maximize eagle persistence
* Minimize cost
* Maximize angler satisfaction

Using this information you will complete the following tasks:

**TASK 1:**

Create alternatives for this decision problem using the following tables. Table 1 = helps you brainstorm a ‘menu’ of potential management actions, grouped by thematic category

Table 2 = helps you create the complete strategy table (create 4 strategies)

Table 1. Brainstorming a menu of management actions

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *Themes:* | *Reintroduction* |  |  |  |
|  | Status Quo  (No reintroduction)  Reintroduce 20 birds in Refuge A  Reintroduce 20 birds in Refuge B  Reintroduce 10 in Refuge A & 10 in B |  |  |  |

Table 2. Create strategy table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Themes→  ↓ Strategies | Reintroduction |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**TASK 2:**

Create an influence diagram for this management problem

A close-up of a rectangle

AI-generated content may be incorrect.

**TASK 3:**

1. Fill in the consequence table and score each outcome of each objective on a simple numeric scale by evaluating the likely outcomes (it’s okay to make up these numbers)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | Alternative Strategies | | | |
| **Objective** | **Measurable attribute** | **Strategy 1:** | **Strategy 2:** | **Strategy 3:** | **Strategy 4:** |
| Maximize eagle persistence | # of eagles after 1 year |  |  |  |  |
| Minimize cost | $ |  |  |  |  |
| Maximize angler satisfaction | Constructed scale |  |  |  |  |

1. What type of models would you use to calculate each of the objectives. Is there another objective that comes to mind for this problem? How would you calculate that one?