

Good work! The refuge manager liked your earlier work on simplifying this complex problem.

SIMPLIFIED TABLE		Treatment (Alternative)		
Objective	Goal	Spring Burn	Mowing	Grazing
Cost (\$/year)	Min	10,000	15,000	1,000
Neighbor Complaints (Estimated Number)	Min	5	0	1
Effects on Listed Plants (Stem density / m2)	Max	10	2	1
Effects on Butterflies (Emergence Index % hatch)	Max	0.05	0.1	0.2
Effects on Beetles (% Area Occupied)	Max	0.02	0.35	0.2

She went to the Regional Office for funding and was told to come back with a single proposal. However, they were concerned that your original bird objective was no longer included in your list (apparently, the Refuge Manager was not able to convey the reason for removing the ‘irrelevant’ objective). She has suggested changing the attribute for this objective so that it is more sensitive to the management alternatives. You decide that acres of winter grass cover for birds will be straight-forward to predict and measure. Your GIS technician was able to provide initial estimates for your remaining alternatives, as follows:

Alternative	Predicted response (winter grass cover, acres)
Spring burn	443
Mowing	435
Grazing	438

Instructions:

The Refuge Manager has asked you to provide her with the single best management option, with a full justification. You respond to her that before you can do this, you need to understand her preferences with respect to the objectives. You propose to use ‘Swing Weighting’ to elicit and quantify her values. She suggests that it would be a good idea to do this for several refuge staff in order to capture possible differences.

Each member in your group has a blank table (page 05b-3). Either select one person to play the role of the manager and the rest as refuge biologists, or all can choose to ‘wear the hat’ of a refuge manager. **As a group**, fill out the swing weight table with objectives (including attributes and the desired direction), the range of values from your remaining alternatives, a benchmark alternative and an appropriate number of hypothetical alternatives to capture the ‘swing’ of each objective. Then, **individually**, each member will conduct their own personal swing weighting elicitation. First, rank the hypothetical alternatives (give a “1” to your first choice and the highest value to the benchmark, etc.), then provide the

corresponding score to each alternative. Reference the material in your notebook from Module 9 for additional guidance. Transfer your scores to the spreadsheet table provided ("Skill Check 5, Student v2015.xlsx/Group Weights"), which will normalize these scores to objective weights.

Skill Check 05b Multiple Objective Tradeoffs

Swing Weighting

	Objective	Attribute	Goal	Range		Benchmark	Hypothetical Alternatives					
				Worst	Best		1	2	3	4	5	6
1												
2												
3												
4												
5												
6												

Rank
Score
Weight
(normalized)

0						
0						