

**NAACC Terrestrial Passage Assessment Protocol Scoring Proposal**  
 October 2018

**I. Animal groupings for scores**

- 1: Small mammals (mice, voles, shrews, squirrels, weasels) and squamates (snakes and lizards)
- 2: Medium mammals (rabbits, hares, porcupines, skunks, fishers, foxes, martens) and box turtles
- 3: Bobcat, lynx
- 4: Bear, coyote, cougar, wolf
- 5: Deer
- 6: Moose

**II. Variables for the score**

Each crossing score will be based on six variables:

- 1: Openness (of largest structure at a crossing) (USES AQUATIC DATA)
- 2: Height of structure (minimum height of largest structure at a crossing)
- 3: Length of structure
- 4: Clear line of sight through structure (yes, partially obscured, no)
- 5: Dry passage
- 6: Barriers to accessing crossing

**III. Scoring each variable**

Variable 1: Openness of structure

Parameterization (units = meters):

	Asymptote	Midpoint	Steepness
<b>Small mammals and squamates</b>	1	0.05	-20
<b>Medium mammals</b>	1	0.1	-10
<b>Bobcat, lynx</b>	1	0.4	-6.0
<b>Bear, coyote, cougar, wolf</b>	1	1	-3.0
<b>Deer</b>	1	0.75	-5.0
<b>Moose</b>	1	1.2	-4.0

Variable 2: Height of structure

Parameterization (units = feet):

	Asymptote	Midpoint	Steepness
<b>Small mammals and squamates</b>	1	2	-1.8
<b>Medium mammals</b>	1	4	-1.8
<b>Bobcat, lynx</b>	1	5	-1.8
<b>Bear, coyote, cougar, wolf</b>	1	7	-0.8
<b>Deer</b>	1	6	-1.5
<b>Moose</b>	1	9	-0.9

Variable 3: Length of structure

Parameterization (units = feet)

	Asymptote	Midpoint	Steepness
<b>Small mammals and squamates</b>	1	50	0.06
<b>Medium mammals</b>	1	120	0.02
<b>Bobcat, lynx</b>	1	120	0.04
<b>Bear, coyote, cougar, wolf</b>	1	120	0.04
<b>Deer</b>	1	120	0.04
<b>Moose</b>	1	120	0.04

Variable 4: Clear line of sight through structure

	No	Partial	Yes
<b>Small mammals and squamates</b>	0.1	.5	1.0
<b>Medium mammals</b>	0.1	.4	1.0
<b>Bobcat, lynx</b>	0.1	.3	1.0
<b>Bear, coyote, cougar, wolf</b>	0.1	.2	1.0
<b>Deer</b>	0.1	.3	1.0
<b>Moose</b>	0.1	.3	1.0

Variable 5: Dry passage – scoring is the same for all animal groups

	Score
<b>No dry passage</b>	0
<b>Inadequate dry passage</b>	0.2
<b>Moderately useable dry passage</b>	0.5
<b>Good dry passage</b>	0.8
<b>Excellent dry passage</b>	1.0

Variable 6: Barriers to accessing crossing – scoring is the same for all animal groups

	Score
<b>Total barrier</b>	0
<b>Severe barrier</b>	0.2
<b>Moderate barrier</b>	0.5
<b>Minor barrier</b>	0.8
<b>No barriers</b>	1.0

**IV. Combining variables for a final score**

Final score for each animal group = MIN (Composite Score, Limiting Variables)
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Weighting of variables for composite score:

	Openness	Height	Length	Clear line of sight	Dry passage	Barriers
<b>Small mammals and squamates</b>	1	1	3	2	3	2
<b>Medium mammals</b>	1	2	2	2	2	2
<b>Bobcat, lynx</b>	1.5	2	1	3	3	2
<b>Bear, coyote, cougar, wolf</b>	3	2	1	3	2	2
<b>Deer</b>	2	2	1	3	2	2
<b>Moose</b>	2	2	1	3	1	2

Limiting variables for each animal group:

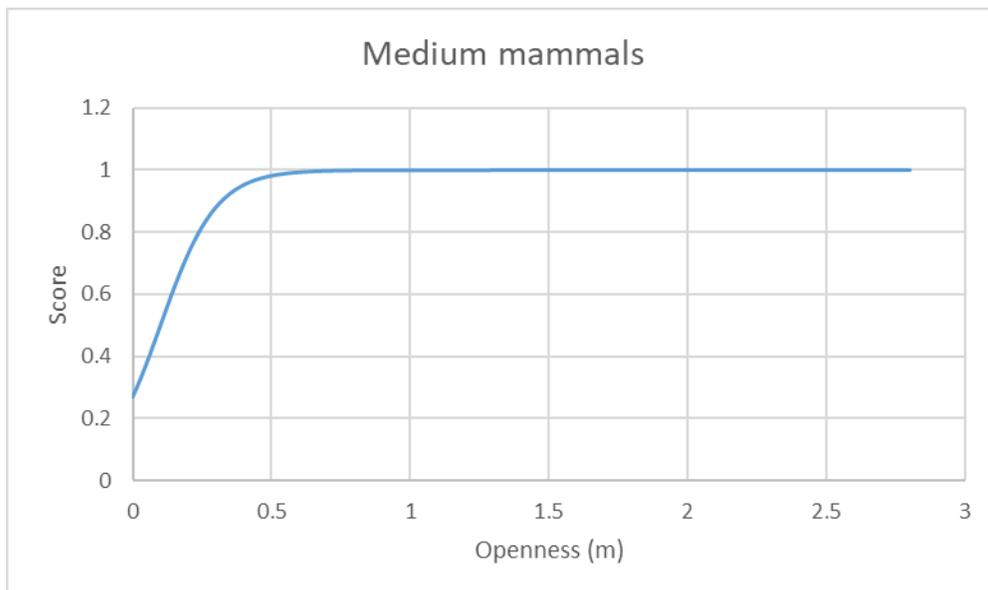
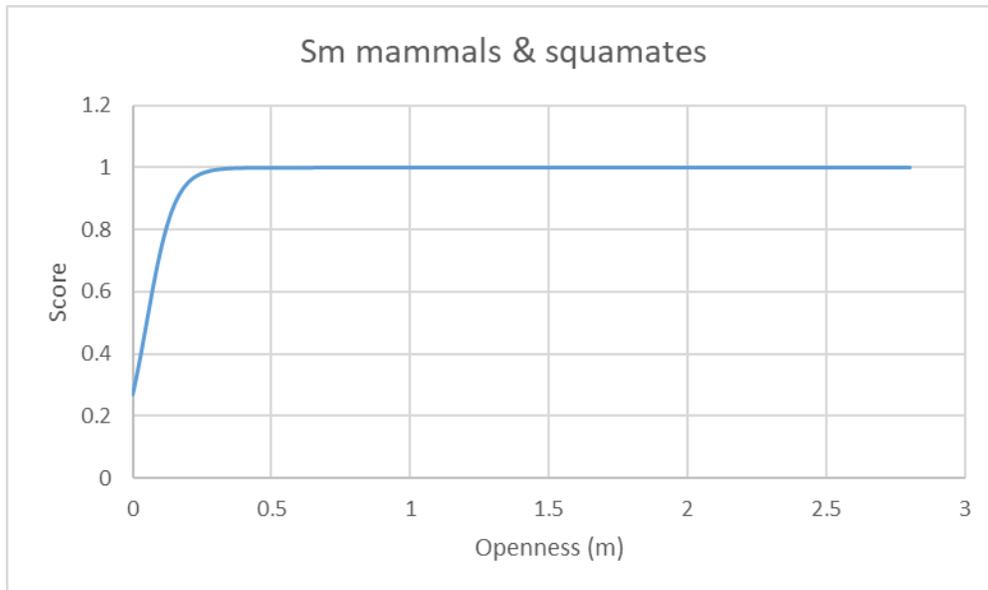
	Openness	Height	Length	Clear line of sight	Dry passage	Barriers
<b>Small mammals and squamates</b>			X		X	X
<b>Medium mammals</b>						X
<b>Bobcat, lynx</b>		X		X	X	X
<b>Bear, coyote, cougar, wolf</b>		X		X		X
<b>Deer</b>		X		X		X
<b>Moose</b>		X		X		X

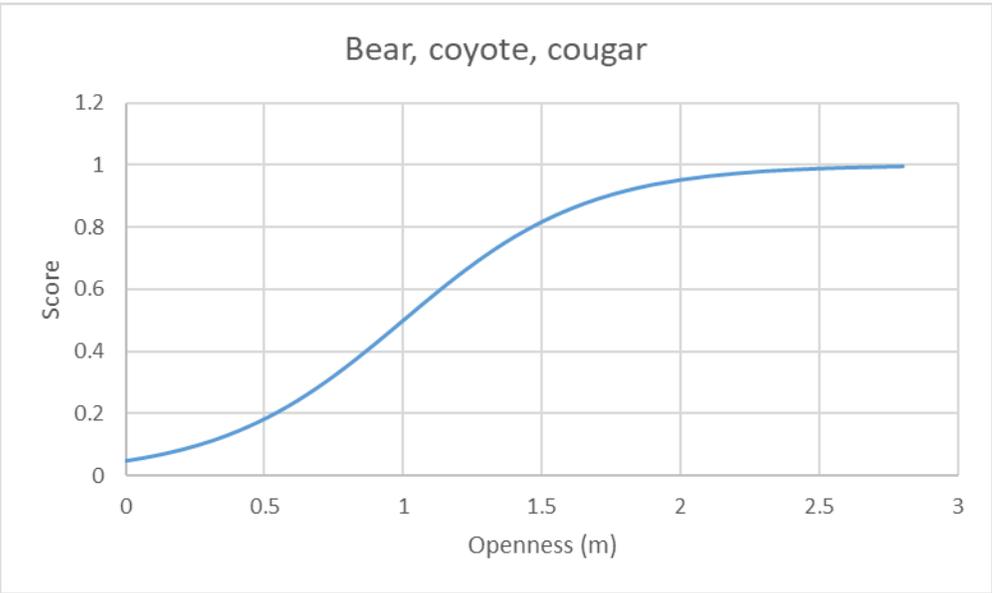
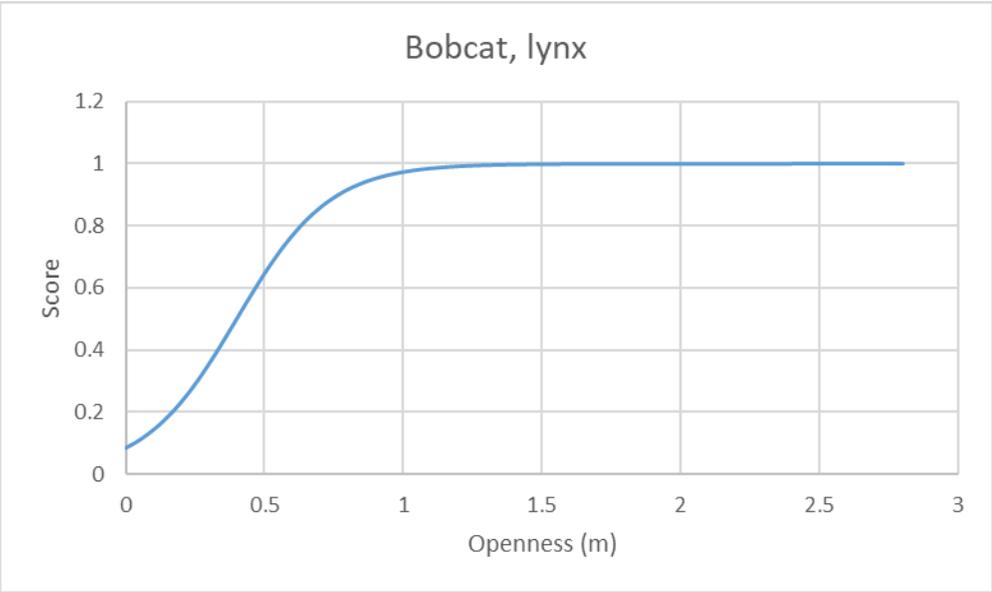
Each crossing will have a score for each animal group and an average score of the six animal group scores.

Graphs for Variables 1 and 2

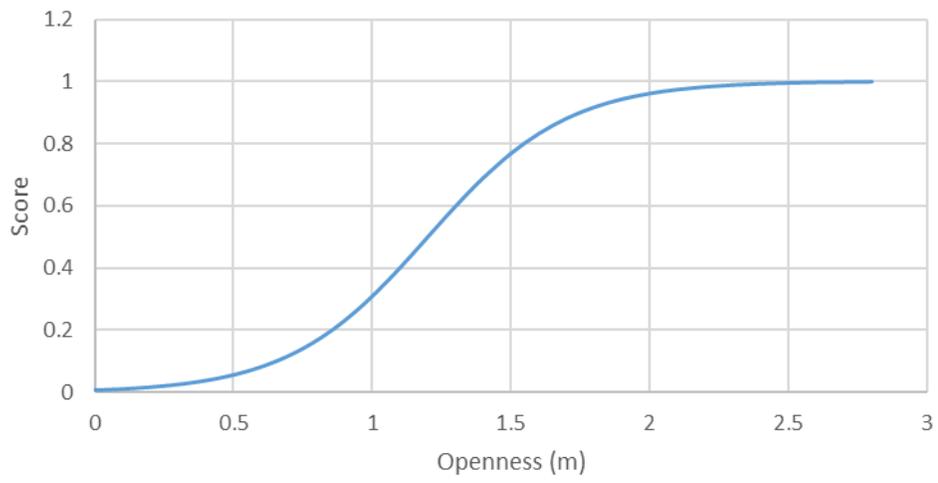
Variable 1: Openness of structure

Parameterization (units = meters):





# Moose



Variable 2: Height of structure

Parameterization (units = feet):

