

Appendix 8

Description of wildlife habitat models developed by Morzillo et. al. 2014.

Summary:

First, habitat structure in an IDU is evaluated and scored as habitat (1) or not habitat (0) based on canopy cover, tree size, layering and tree species composition (cover type). Second, the physical environment of an IDU is evaluated and scored (1-3) based on PVT. The final score is the product of the habitat structure score and the PVT score. Scores of 3 were considered habitat.

Details:

The following are lookup tables for the different species. Mapping is based on a combination of following variables:

- Canopy Cover, Canopy Layering and Size – 1/0 entries (1 = habitat; 0 = not habitat)
- COVERTYPE – 1/0 entries (1 = habitat; 0 = not habitat)
- PVT – 3/2/1 entries (3 = good; 2 = fair; 1 = poor)

Table A8.1 Scoring rules based on PVT and stand structure scores

PVT Score	Score based on stand characteristics	
	1	0
3	3	0
2	2	0
1	1	0

For all species other than mule deer, the binomial (1/0) stand characteristic score is defined as:

1 = habitat

0 = not habitat

For each species, only those stand characteristics that have a value of “1” (VEGCLASS (Size =1, Canopy Cover =1 and Canopy Layering = 1) AND COVERTYPE = 1) are assigned a PVT score. For each species, those stand characteristics that have a value of “0” are not assigned a PVT value because they are non-habitat for that species based on the binomial score.

Areas considered habitat in the modeling and analysis had PVT scores of ‘3’ (except for Black-backed Woodpecker which had scores of 2 or 3) based on presence of suitable structure and PVT.

Table A8.2. Canopy Cover Lookup Table. PM=Pacific Marten; BBWO Black-backed Woodpecker; NOGO = Northern Goshawk; PIWO = Pileated Woodpecker; WEBL = Western Bluebird; WHWO = White-headed Woodpecker .

Canopy Cover	PM	BBWO	NOGO	PIWO	WEBL	WHWO
None		*			1	
Low		1			1	1
Medium	1	1		1		
High	1		1	1		
Post-Disturb		1			1	1

Table A8.3. Scores for species canopy layering

Canopy Layering	AM	BBWO	NOGO	PIWO	WEBL	WHWO
None		*			1	
Single		1			1	1
Multi	1		1	1		1

Table A8.4. Scores for species by stem size

Size	AM	BBWO	NOGO	PIWO	WEBL	WHWO
Barren						
Development						
Meadow	1				1	
Shrub		*			1	
Seedling/Sapling		*			1	
Pole		1			1	1
Small Tree	1	1		1	1	1
Medium Tree	1	1	1	1	1	1
Large Tee	1	1	1	1	1	1
Giant Tree	1	1	1	1		1

* For Black-backed woodpecker, open, single layer and shrub seedling/sapling conditions are scored as '1' if area has experienced a fire within 10 years and pre-fire conditions had forest vegetation with size > Pole.

Table A8.5. Scores for species by cover type

	AM	BBWO	NOGO	PIWO	WEBL	WHWO
SubAlp						
parkland		1	1			
Asp_Willow				1		
Oak					1	
OakPine		1	1	1	1	1
DougFir		1	1	1	1	1
DougFir Mix						
DFWF		1	1	1	1	1

GfirEspruce	1	1	1	1	1	1
SFmix	1		1	1	1	
LPPWlarch	1	1	1	1		
Western Hemlock						
GrandFir	1	1	1	1	1	1
White Fir	1	1		1		1
RedFir	1	1	1	1		1
RFWF	1	1	1	1		1
EspruceSAfir	1	1	1			
MtnHem	1	1				
Lodgepole	1	1	1			
LPWUI	1	1				
MixPine	1	1	1	1	1	1
Ponderosa Pine	1	1	1		1	1
PP/LP	1	1	1			1
WhitePine	1					
Jeffrey Pine						
Western Juniper						

Table A8.6 Scores for species by PVT

Region	PVT	AM	BBWO	NOGO	PIWO	WEBL	WHWO
Oregon	Idaho fescue						
Blue Mountains	- Prairie junegrass		1	1	1	1	1
Oregon	Bluebunch						
Blue Mountains	wheatgrass - Sandberg bluegrass		1	1	1	1	1
Oregon	Low sage -						
Blue Mountains	Mesic, no juniper		1	1	1	1	1
Oregon	Low sage -						
Blue Mountains	Mesic, with juniper		1	1	1	2	1
Oregon	Mountain big						
Blue Mountains	sagebrush - With juniper		1	1	1	2	1
Oregon							
Blue Mountains	Bitterbrush - With juniper		1	1	1	2	1

Oregon Blue Mountains	Rigid sage		1	1	1	1	1
Oregon Blue Mountains	Wyoming big sagebrush - With juniper		1	1	1	2	1
Oregon Blue Mountains	Western juniper woodland		1	1	1	3	1
Oregon Blue Mountains	Wyoming big sagebrush - No juniper		1	1	1	1	1
Oregon Blue Mountains	Subalpine fir - cold, dry	2	2	1	1	1	1
Oregon Blue Mountains	Grand fir - cool, moist	2	3	3	3	3	2
Oregon Blue Mountains	Ponderosa pine - dry, with juniper	2	2	3	3	3	3
Oregon Blue Mountains	Mountain hemlock - cold, dry	3	3	3	1	1	1
Oregon Blue Mountains	Mixed conifer - cold, dry	3	3	3	1	2	1
Oregon Blue Mountains	Subalpine woodland	2	2	1	3	1	1
Oregon Blue Mountains	Ponderosa pine - xeric	2	3	3	3	3	3
Oregon Southeast	Low sage - Mesic, no juniper			1		1	
Oregon Southeast	Low sage - Mesic, with juniper			1		2	
Oregon Southeast	Mountain big sagebrush - With juniper			1		2	
Oregon Southeast	Mountain mahogany			1		1	

Oregon Southeast	Bitterbrush - With juniper			1		2	
Oregon Southeast	Rigid sage Salt desert shrub - Lowland			1		1	
Oregon Southeast	Wyoming big sagebrush - With juniper			1		2	
Oregon Southeast	Western juniper woodland			1		2	
Oregon Southeast	Wyoming big sagebrush - No juniper			1		1	
Oregon Southeast	Mixed conifer - cold, dry			3		2	
Oregon Southeast	Mixed conifer - dry (pumice soils)			3		2	
Oregon Southeast	Ponderosa pine - dry (residual soils)			3		3	
Oregon Southeast	Ponderosa pine - xeric			3		3	
Oregon Eastern Cascades	Idaho fescue - Prairie junegrass	1	1	1	1	1	1
Oregon Eastern Cascades	Bluebunch wheatgrass - Sandberg bluegrass	1	1	1	1	1	1
Oregon Eastern Cascades	Low sage - Mesic, no juniper	1	1	1	1	1	1
Oregon Eastern Cascades	Low sage - Mesic, with juniper	1	1	1	1	1	1
Oregon Eastern Cascades	Mountain big sagebrush - With juniper	1	1	1	1	2	1
Oregon Eastern	Bitterbrush - With juniper	1	1	1	1	2	1

Cascades							
	Rigid sage	1	1	1	1	1	1
Oregon	Wyoming big						
Eastern	sagebrush -	1	1	1	1	1	1
Cascades	With juniper						
Oregon	Western						
Eastern	juniper	1	1	1	1	2	1
Cascades	woodland						
Oregon	Wyoming big						
Eastern	sagebrush -	1	1	1	1	1	1
Cascades	No juniper						
Oregon	Idaho fescue						
Eastern	- Prairie	1	1	1	1	1	1
Cascades	junegrass						
Oregon	Bluebunch						
Eastern	wheatgrass -	1	1	1	1	2	1
Cascades	Sandberg						
	bluegrass						
Oregon	Low sage -						
Eastern	Mesic, no	1	1	1	1	2	1
Cascades	juniper						
Oregon	Low sage -						
Eastern	Mesic, with	1	1	1	1	1	1
Cascades	juniper						
Oregon	Subalpine						
Eastern	parkland	1	2	1	1	1	1
Cascades							
Oregon	Lodgepole						
Eastern	pine - dry	2	3	3	1	1	2
Cascades							
Oregon	Lodgepole						
Eastern	pine - wet	3	3	3	1	1	2
Cascades							
Oregon	Mixed						
Eastern	conifer - dry	3	3	3	3	2	3
Cascades							
Oregon	Mountain						
Eastern	hemlock	3	3	3	1	1	1
Cascades							
Oregon	Mountain						
Eastern	hemlock -						
Cascades	intermediate	3	3	3	1	1	1
Oregon	Mixed						
Eastern	conifer -	2	3	3	3	2	3
Cascades	moist						

Oregon Eastern Cascades	Mixed conifer - dry (pumice soils)	3	3	3	3	2	3
Oregon Eastern Cascades	Mixed conifer - cold, dry	3	3	3	3	2	3
Oregon Eastern Cascades	Oregon white oak / Ponderosa pine	1	3	2	2	2	2
Oregon Eastern Cascades	Ponderosa pine - dry (residual soils)	2	3	3	2	3	3
Oregon Eastern Cascades	Ponderosa pine - Lodgepole pine	3	3	3	2	2	3
Oregon Eastern Cascades	Shasta red fir - dry	3	1	3	3	1	1
Oregon Eastern Cascades	Pacific silver fir - intermediate	3	1	3	3	3	1
Oregon Eastern Cascades	Pacific silver fir - warm	3	1	3	3	3	1
Oregon Eastern Cascades	Western hemlock - cold	3	1	3	3	3	1
Oregon Eastern Cascades	Western hemlock - intermediate	3	1	3	3	3	1
Oregon Eastern Cascades	Western hemlock - wet	3	1	3	3	3	1

Oregon Eastern Cascades	Ponderosa pine - xeric	3	1	3	3	3	1
Oregon Southwest	Subalpine parkland	1	2	1	1	1	1
Oregon Southwest	White fir - cool	3	3	2	3	1	2
Oregon Southwest	Douglas-fir - dry	3	2	3	3	3	3
Oregon Southwest	Douglas-fir - moist	3	2	3	3	3	3
Oregon Southwest	White fir - intermediate	3	3	2	3	1	2
Oregon Southwest	Mountain hemlock - cold, dry	3	3	3	1	1	1
Oregon Southwest	Ponderosa pine - dry, with juniper	2	3	3	2	3	1
Oregon Southwest	Shasta red fir - moist	3	1	3	3	1	2
Oregon Southwest	Oregon white oak	1	1	1	1	1	1

Morzillo, A. T., Comeleo, P., Csuti, B., & Lee, S. Application of State-and-Transition Models to Evaluate Wildlife Habitat. 2014. Pages 129-145 in Halosfky, J.E, M.K. Creutzburg, and M.A. Hemstrom Eds. *Integrating Social, Economic, and Ecological Values Across Large Landscapes*, Portland OR, USDA Forest Service Pacific Northwest Research Station, PNW GTR-896. 206 p.