

## Appendix 1

Covariate summary from 840 point count surveys within the Monongahela National Forest, West Virginia, USA, summarized by surveys where Canada Warblers (*Cardellina canadensis*) were and were not detected.

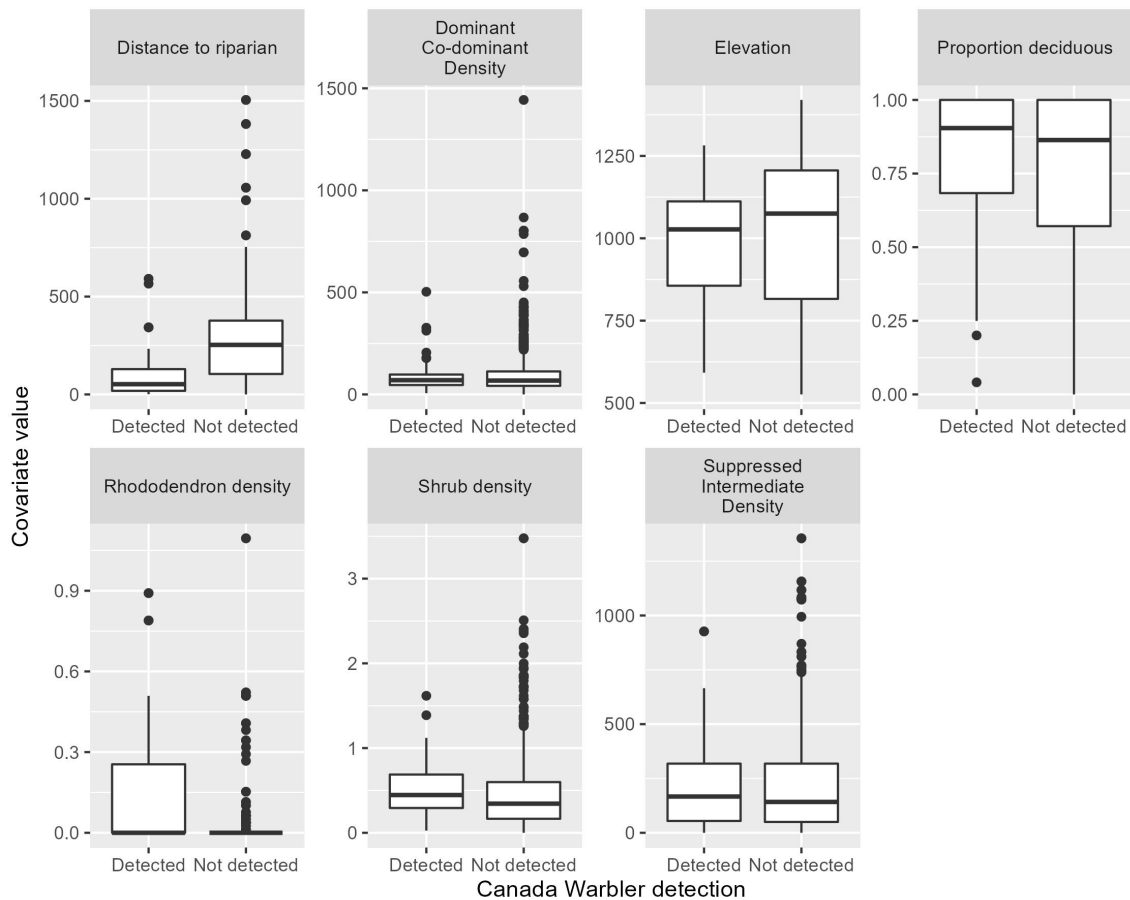


Figure A1: Boxplot of variables at point count surveys where Canada warblers (*Cardellina canadensis*) were and were not detected in the Monongahela National Forest, West Virginia, USA. Horizontal lines represent the median value; lower and upper hinges represent the 25th and 75 percentiles; whiskers extends to the smallest and largest values no further than  $1.5 * \text{IQR}$  (interquartile range) from each hinge; and the remaining outlying points are plotted individually. Rhododendron and shrub density are reported in units of stems per square meter; dominant / co-dominant and suppressed / intermediate density are reported in units of stems per hectare.

Table A1: Correlation between predictor variables used to model Canada warbler (*Cardellina canadensis*) detection / non-detection data in the Monongahela National Forest, West Virginia, USA. Complete variable descriptions are presented in the main text.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
A	1.00	-0.01	0.02	0.09	-0.02	0.17	0.17	-0.02	0.04	0.03	-0.03	0.07	-0.01	0.05
B	-0.01	1.00	0.36	0.15	-0.05	-0.21	-0.05	0.00	-0.19	-0.43	0.35	0.21	0.15	-0.31
C	0.02	0.36	1.00	0.07	-0.08	0.00	0.03	-0.03	-0.01	-0.09	0.12	0.10	0.00	-0.03
D	0.09	0.15	0.07	1.00	0.13	0.37	0.02	-0.05	0.08	-0.16	0.18	0.04	-0.07	-0.10
E	-0.02	-0.05	-0.08	0.13	1.00	-0.03	-0.06	0.02	-0.07	-0.02	-0.07	-0.04	0.07	0.03
F	0.17	-0.21	0.00	0.37	-0.03	1.00	-0.07	-0.07	0.28	-0.11	-0.09	-0.05	-0.12	0.10
G	0.17	-0.05	0.03	0.02	-0.06	-0.07	1.00	-0.07	-0.04	0.27	-0.09	0.27	0.04	0.18
H	-0.02	0.00	-0.03	-0.05	0.02	-0.07	-0.07	1.00	-0.17	0.07	0.21	-0.10	0.03	-0.07
I	0.04	-0.19	-0.01	0.08	-0.07	0.28	-0.04	-0.17	1.00	-0.48	-0.28	-0.09	-0.05	0.23
J	0.03	-0.43	-0.09	-0.16	-0.02	-0.11	0.27	0.07	-0.48	1.00	-0.18	-0.05	-0.05	0.14
K	-0.03	0.35	0.12	0.18	-0.07	-0.09	-0.09	0.21	-0.28	-0.18	1.00	0.26	0.11	-0.37
L	0.07	0.21	0.10	0.04	-0.04	-0.05	0.27	-0.10	-0.09	-0.05	0.26	1.00	0.14	-0.14
M	-0.01	0.15	0.00	-0.07	0.07	-0.12	0.04	0.03	-0.05	-0.05	0.11	0.14	1.00	-0.08
N	0.05	-0.31	-0.03	-0.10	0.03	0.10	0.18	-0.07	0.23	0.14	-0.37	-0.14	-0.08	1.00

A: 2017

B: Elevation

C: Distance to riparian

D: Shrub density

E: Rhododendron density

F: Young harvest

G: Old harvest

H: Old-age forest

I: Mixed mesophytic forest

J: Oak / pine forest

K: Red spruce forest

L: Co-dominant tree density

M: Intermediate / suppressed tree density

N: Proportion deciduous

Table A2: Mean value of each predictor variable from 840 point count surveys summarized by surveys where Canada warbler (*Cardellina canadensis*) were and were not detected in the Monongahela National Forest, West Virginia, USA. Complete variable descriptions are presented in the main text.

Variable	Detected	Not detected
Rhododendron density	0.16	0.01
Distance to riparian	99.04	273.65
Elevation	976.10	1026.29
Shrub density	0.53	0.45
Dominant / Codominant Density	90.62	101.36
Suppressed / Intermediate Density	222.38	217.10
Proportion deciduous	0.79	0.75
2017	0.42	0.45
2018	0.58	0.55
<20 yr old harvest	0.03	0.07
20 - 40 yr old harvest	0.05	0.07
Mature forest	0.85	0.80
Old age forest	0.07	0.06
Mixed mesophytic	0.42	0.43
Oak / pine	0.05	0.25
Red spruce	0.03	0.10
Northern hardwood	0.49	0.22