

Appendix 3. Selection frequencies of covariates across three model subsets for estimating population density of the Olive-sided Flycatcher and Canada Warbler. Covariate full names and descriptions are available in Tables 1 and 2.

Table A3.1, Selection frequencies of covariates at each model stage across three subsets of 240 bootstrapped log-linear Poisson model runs for Olive-sided Flycatcher. Covariates are labelled by buffer size, local (L) and territory (T).

Stage	Subset	Covariate	F	%
1-2. Wetness & Forest Cover	WETxFOR	CASFRIxWET_PROP	218	90.8
	WETLANDS	WET_LENGTH (T), CASFRI (T)	16	6.7
	WETNESS	WET_LENGTH (T), CASFRI (T)	4	1.7
	WETNESS	DTW_STD (T), CASFRI (T)	2	0.8
3. Forest Structure	WETxFOR	HT_STD (T)	116	48.3
	WETxFOR	CANCL_AV (L)	56	23.3
	WETxFOR	CANCL_STD (L)	39	16.2
	WETLANDS	CANCL_AV (L)	11	4.6
	WETxFOR	HT_AV local	7	2.9
	WETNESS	CANCL_AV (L)	4	1.7
	WETLANDS	HT_STD (T)	2	0.8
	WETLANDS	CANCL_STD (L)	2	0.8
	WETNESS	HT_STD (T)	1	0.4
	WETNESS	CANCL_AV (T)	1	0.4
	WETLANDS	HT_AV local	1	0.4
4. Landscape Complexity	WETxFOR	COMPLEXITY (T)	171	71.2
	WETxFOR	Null	47	19.6
	WETLANDS	COMPLEXITY (T)	12	5.0
	WETNESS	COMPLEXITY (T)	4	1.7
	WETLANDS	Null	4	1.7
	WETNESS	Null	2	0.8
5. Disturbance	WETxFOR	FOOTPRINT (T)	218	90.8
	WETLANDS	FOOTPRINT (T)	16	6.7
	WETNESS	FOOTPRINT (T)	6	2.5
6. Road Distance	WETxFOR	Null	211	87.9
	WETLANDS	Null	11	4.6
	WETxFOR	ROAD (L)	7	2.9
	WETNESS	Null	5	2.1
	WETLANDS	ROAD (L)	5	2.1
	WETNESS	ROAD (L)	1	0.4
7. Landscape Connectivity	WETxFOR	CONNECT (T)	119	49.6
	WETxFOR	NULL	99	41.2
	WETLANDS	CONNECT (T)	14	5.8
	WETNESS	CONNECT (T)	6	2.5
	WETLANDS	Null	2	0.8

Stage	Subset	Covariate	F	%
8. Protection Status	WETxFOR	Null	149	62.1
	WETxFOR	PROTECT (L)	69	28.8
	WETLANDS	Null	9	3.8
	WETNESS	Null	8	3.3
	WETLANDS	PROTECT (L)	7	2.9
	WETNESS	PROTECT (L)	3	1.2
	WETNESS	Null	3	1.2

Table A3.2, Selection frequencies of covariates at each model stage across three subsets of 240 bootstrapped log-linear Poisson model runs for Canada Warbler. Covariates are labelled by buffer size, local (L) and territory (T). Column title abbreviations: F = Frequency, % = Percent selected.

Stage	Subset	Covariate	F	%
1-2. Wetness & Forest Cover	WETNESS	DTW_STD (T), CASFRI (T)	185	77.1
	WETNESS	DTW_STD (T), CASFRI (L)	52	21.7
	WETxFOR	CASFRIxDTW_PROP (T)	2	0.8
	WETNESS	DTW_STD (T), Null	1	0.4
3. Forest Structure	WETNESS	CANCL_STD (L)	144	60
	WETNESS	HT_STD (T)	68	28.3
	WETNESS	CANCL_AV (T)	12	5
	WETNESS	CANCL_AV (L)	8	3.3
	WETNESS	HT_AV (L)	6	2.5
	WETxFOR	CANCL_STD (L)	2	0.8
4. Landscape Complexity	WETNESS	COMPLEXITY (T)	230	95.8
	WETNESS	Null	8	3.3
	WETxFOR	Null	1	0.4
	WETxFOR	COMPLEXITY (T)	1	0.4
5. Disturbance	WETNESS	FOOTPRINT (T)	226	94.2
	WETNESS	CASFRI_DIST (T)	12	5
	WETxFOR	FOOTPRINT (T)	2	0.8
6. Road Distance	WETNESS	Null	203	84.6
	WETNESS	ROAD (L)	35	14.6
	WETxFOR	Null	2	0.8
7. Landscape Connectivity	WETNESS	CONNECT (T)	238	99.2
	WETxFOR	CONNECT (T)	2	0.8
8. Protection Status	WETNESS	Null	128	53.3
	WETNESS	PROTECT (L)	110	45.8
	WETxFOR	Null	1	0.4
	WETxFOR	PROTECT (L)	1	0.4

Table A3.3, Top ranked covariates explaining variation in density estimates for the Olive-sided Flycatcher and Canada Warbler for each model subset. Models represent the most-selected variable from each stage of the model-building process. Scale of variable is indicated as local (L) or territory (T).

Species	Subset	Top ranked model
OSFL	WETLAND S	Count ~ WET_LENGTH (T) + CASFRI (T) + HT_STD (T) + COMPLEX (T) + FOOTPRINT (T) + CONNECT (T)
	WETNESS	Count ~ DTW_STD (T) + CASFRI (T) + HT_STD (T) + COMPLEX (T) + FOOTPRINT (T) + CONNECT (T)
	WETxFOR	Count ~ CASFRIxDTW_PROP (T) + HT_STD (T) + COMPLEX (T) + FOOTPRINT (T) + CONNECT (T)
CAWA	WETLAND S	Count ~ WET_LENGTH (T) + CASFRI (T) + CANCL_STD (L) + COMPLEX (T) + FOOTPRINT (T) + CONNECT (T) + PROTECT (L)
	WETNESS	Count ~ DTW_STD (T) + CASFRI (T) + CANCL_STD (L) + COMPLEX (T) + FOOTPRINT (T) + CONNECT (T) + PROTECT (L)
	WETxFOR	Count ~ CASFRIxDTWPROP (T) + CANCL_STD (L) + COMPLEX (T) + FOOTPRINT (T) + CONNECT ter + PROTECT (L)

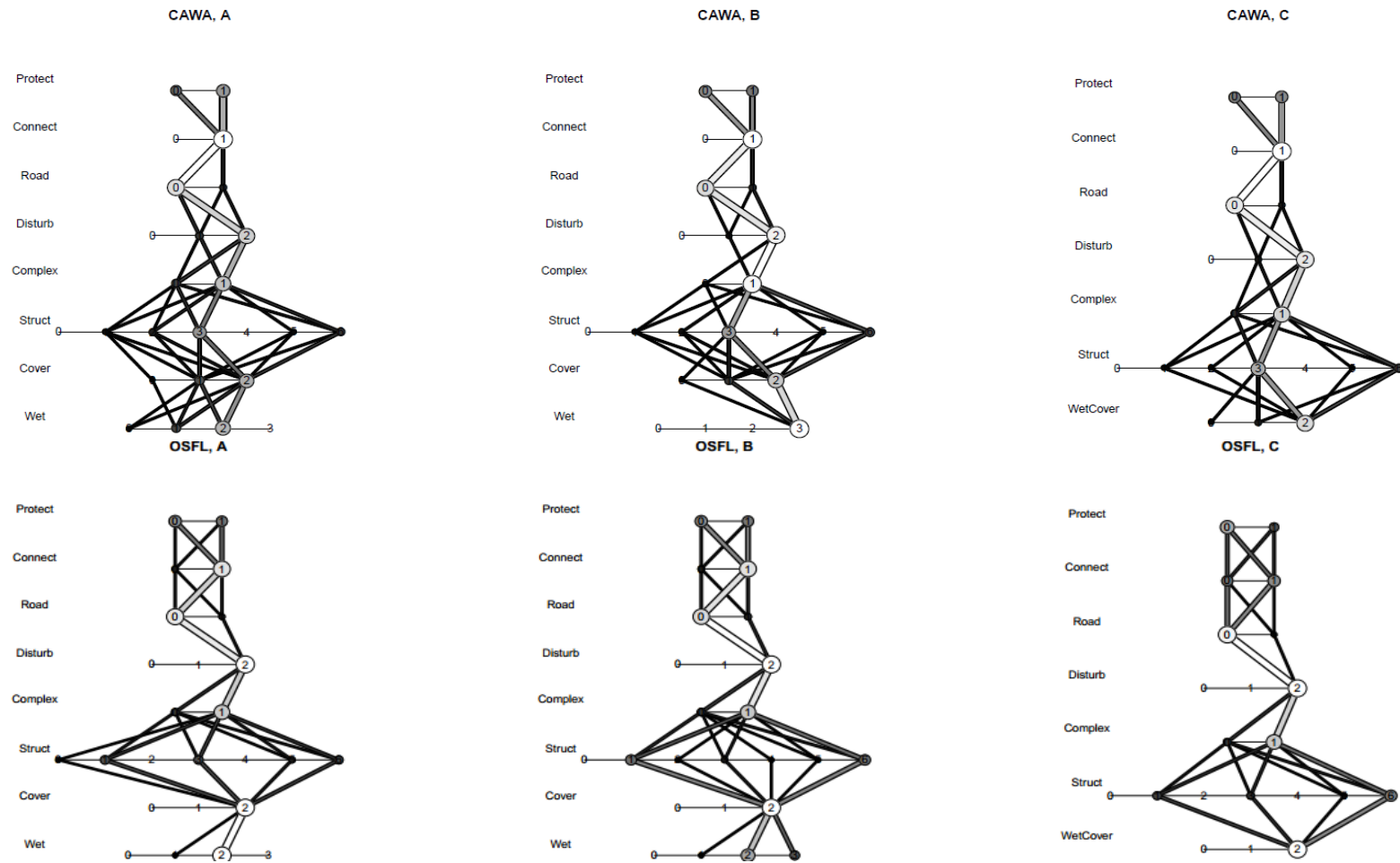


Fig A3.1, Selection paths of variables best explaining variation in density estimation of Olive-sided Flycatcher and Canada Warbler in New Brunswick and Nova Scotia based on the branching hierarchy model building process. Results for three model subsets (A – WETLANDS, B – WETNESS, C – WETxFOR) represent selection frequencies from 240 bootstrap iterations. Horizontal lines show each model stage, and numbers indicate individual covariates. Shade and thickness of line are proportional to selection frequency, with thicker lines of lighter shades indicating higher selection frequencies.