

Table S1: Model selection using linear mixed-effect models and Akaike information criterion to test for the effects of state, wind speed, bird-wind angle (BWA), year and sex on $ODBA_v$. Not all models are represented. Table S1A present the selection of models with a cumulative sum of AIC weights >0.9 and the null model (intercept). Table S1B is the estimates of each best model with the lowest AIC. K is the number of parameters. ΔAIC is the difference of AIC between a given model and the model with the lowest AIC. AIC weight is the probability that a given model is the best approximating model.

S1A Model 1 selection (34 birds, 16696 locations)

N°	Model	K	AIC	ΔAIC	AIC weight
1.1	State*WindSpeed*BWA	9	-31597.64	0	0.40
1.2	Year+State*WindSpeed*BWA	10	-31596.7	0.94	0.25
1.3	Sex+State*WindSpeed*BWA	10	-31595.98	1.66	0.17
1.4	Year+Sex+State*WindSpeed*BWA	11	-31594.98	2.66	0.11
1.0	Intercept	2	-31082.76	514.88	0.00

S1B Model 1.1 parameter estimation

	Parameter	Estimate	SE
1.1	Intercept	0.653	0.018
1.1	StateTravelling	-0.045	0.014
1.1	WindSpeed	-0.0027	0.0020
1.1	WindSpeed:StateTravelling	0.0022	0.0019
1.1	BWA	-0.000011	0.000083
1.1	BWA:StateTravelling	-0.00016	0.00012
1.1	WindSpeed:BWA	-0.000016	0.000011
1.1	WindSpeed:BWA:StateTravelling	-0.000026	0.000017

1 **Table S2: Model selection using linear mixed-effect models and Akaike information criterion to**
2 **test for the effects of trip phase, year and sex on ODBA_v during travelling.** Not all models are
3 represented. Table S2A present the selection of models with a cumulative sum of AIC weights >0.9
4 and the null model (intercept). Table S2B is the estimates of each best model with the lowest AIC. K
5 is the number of parameters. Δ AIC is the difference of AIC between a given model and the model
6 with the lowest AIC. AIC weight is the probability that a given model is the best approximating
7 model.

S2A Model 2 selection (32 birds, 11244 locations)

N°	Model	K	AIC	Δ AIC	AIC weight
2.1	TripPhase	3	-24502.54	0	0.43
2.2	Year+TripPhase	4	-24501.47	1.07	0.25
2.3	Sex+TripPhase	4	-24501.06	1.48	0.21
2.4	Year+Sex+TripPhase	5	-24499.85	2.69	0.11
2.0	Intercept	2	-24470.42	32.12	0.00

S2B Model 2.1 parameter estimation

	Parameter	Estimate	SE
2.1	Intercept	0.591	0.012
2.1	Middle Phase	-0.023	0.006
2.1	Outward Phase	-0.043	0.007

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