

**Supplementary Information**

**Wind farm bat fatalities in southern Brazil: temporal patterns and influence of environmental factors**

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**Table S1:** List of images downloaded from the National Institute of Space Research (INPE). From Resourcesat II Satellite using the LISSIII sensor. Used to classify land-use around the Santa Vitória do Palmar Wind Complex (33°34'21.04" S; 53°15'31.66" W). Southern Brazil

Identity	Season/year	Date of image capture
RES2AWIF32510120140926	Spring/2014	09/26/14
RES2AWIF32410520150212	Summer/2015	02/12/15
RES2AWIF32410320150612	Autumn/2015	06/12/15
RES2AWIF33010120151016	Spring/2015	10/16/15
RES2AWIF33010420160308	Summer/2016	03/08/16
RES2AWIF32510520160611	Autumn/2016	06/11/16
RES2AWIF32710220161112	Spring/2016	11/12/16
RES2AWIF32710020170216	Summer/2017	02/16/17
RES2LIS332710320170429	Autumn/2017	04/29/17
RES2AWIF32510520171004B	Spring/2018	10/04/17
RES2AWIF32710420180307	Summer/2018	03/07/18

**Table S2:** Multiple regression models relating bat fatalities with land-use during Spring (2014 to 2018). Land-use classes: rice culture (Rice), water surface (Water), grasslands with native species (Grassland), exposed soil (Soil) and pasture plantation (Pasture). Results with significant differences in bold,  $p < 0.05$

Use of the soil	Coeff.	Standard Error	t	P	R <sup>2</sup>
Constant	0.5955	0.1299	4.586	0	
Rice	<-0.0001	<0.0001	-1.025	0.3058	0.0011
Water	<-0.0001	<0.0001	-0.8196	0.4128	0.0005
<b>Grassland</b>	<b>&lt;-0.0001</b>	<b>&lt;0.0001</b>	<b>-2.2862</b>	<b>0.0227</b>	<b>0.0034</b>
<b>Soil</b>	<b>&lt;-0.0001</b>	<b>&lt;0.0001</b>	<b>-1.9815</b>	<b>0.0481</b>	<b>0.0001</b>
Pasture	<0.0001	<0.0001	0.5802	0.562	0.0014
<b>Distance to city (Km)</b>	<b>-0.0306</b>	<b>0.0083</b>	<b>-3.6959</b>	<b>0.0002</b>	<b>0.0259</b>

**Table S3:** Multiple regression models relating bat fatalities with land-use during Summer (2014 to 2018). Land-use classes: rice culture (Rice), water surface (Water), grasslands with native species (Grassland), exposed soil (Soil) and pasture plantation (Pasture). Results with significant differences in bold,  $p < 0.05$

Use of the soil	Coeff.	Standard Error	t	P	R <sup>2</sup>
Constant	1.2402	0.2590	4.7868	<0.0001	
<b>Rice</b>	<b>&lt;-0.0001</b>	<b>&lt;0.0001</b>	<b>-1.9052</b>	<b>0.0573</b>	<b>0.0062</b>
Water	<0.0001	<0.0001	0.0252	0.9798	<0.0001
Grassland	<-0.0001	<0.0001	-0.5436	0.5869	<0.0001
Soil	<0.0001	<0.0001	0.9011	0.3679	0.0015
Pasture	<0.0001	0.0001	0.5094	0.6106	0.0002
<b>Distance to city (Km)</b>	<b>-0.0898</b>	<b>0.0289</b>	<b>-3.1095</b>	<b>0.0019</b>	<b>0.0172</b>

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**Table S4:** Multiple regression models relating bat fatalities with land-use during Autumn (2014 to 2018). Land-use classes: rice culture (Rice), water surface (Water), grasslands with native species (Grassland), exposed soil (Soil) and pasture plantation (Pasture). Results with significant differences in bold,  $p < 0.05$

Use of the soil	Coeff.	Standard Error	t	P	R <sup>2</sup>
Constant	0.0597	0.0202	2.9487	0.0033	
Rice	<-0.0001	<0.0001	-0.3095	0.757	0.0001
Water	<-0.0001	<0.0001	-0.3154	0.7525	0.0003
<b>Grassland</b>	<b>&lt;-0.0001</b>	<b>&lt;0.0001</b>	<b>-2.6145</b>	<b>0.0092</b>	<b>&lt;0.0001</b>
Soil	<0.0001	<0.0001	0.2889	0.7727	<0.0001
<b>Pasture</b>	<b>&lt;0.0001</b>	<b>&lt;0.0001</b>	<b>2.8927</b>	<b>0.0039</b>	<b>0.0024</b>
<b>Distance to city (Km)</b>	<b>-0.0056</b>	<b>0.0023</b>	<b>-2.4171</b>	<b>0.0159</b>	<b>0.0089</b>

**Table S5:** Estimates, standard error, t-value and significance for the predictor variables in the full model

	Estimate	Standard Error	t value	Pr(> t)
Intercept	39.68456	71.985872	0.551	0.582
Average humidity	-0.009233	0.030386	-0.304	0.761
Average barometer	-0.03378	0.068665	-0.492	0.623
Average temperature	-0.11652	0.110533	-1.054	0.292
Average wind velocity	0.071575	0.116235	0.616	0.538
Wind Direction n	0.056365	1.593359	0.035	0.972
Wind Direction ne	-0.479082	0.972797	-0.492	0.623
Wind Direction nw	-1.433546	1.504567	-0.953	0.341
Wind Direction s	-1.122743	1.184887	-0.948	0.344
Wind Direction se	-1.262768	1.219907	-1.035	0.301
Wind Direction sw	-0.958904	1.301858	-0.737	0.462
Wind Direction w	-2.087181	1.317788	-1.584	0.114