

Appendices

List of the Appendices:

Appendix 1: Measured features helping to describe meteorological modifiers.....	II
Appendix 2: Farm activities.....	IV
Appendix 3: Statistical tables.....	VI
Appendix 4: Combine effect of factors loadings from the principle component analysis performed on meteorological modifiers, and generalized linear models showing the influence of meteorological modifiers on the behaviours and locations of captive guanacos.....	X

Appendix 1: Appendix 1: Measured features helping to describe meteorological modifiers.

True North:

True north is a navigational term referring to the direction of the North Pole relative to the navigator's position. The direction of true north is marked in the skies by the celestial North Pole.

Magnetic North:

The point on the Earth's surface where the Earth's magnetic field points directly downwards. This pole is constantly wandering.

Wind Chill:

The cooling effect of combining wind and temperature. The wind chill gives a more accurate reading of how cold it really feels to the human body. The Kestrel Meter's wind chill is based on the National Weather Service standards as of November 1, 2001.

Relative Humidity:

The amount of water vapor in the air divided by the maximum amount of water vapor the air could hold at that temperature, expressed as a percentage.

Temperature:

The ambient air temperature.

Heat Index:

A practical measure of how hot the current combination of relative humidity and temperature feels to a human body. Higher relative humidity makes it seem hotter because the body's ability to cool itself by evaporating perspiration is reduced.

Dewpoint:

The temperature to which air must be cooled in order for condensation to occur. The difference between dewpoint and temperature is referred to as the "temperature/dew point spread". A low dewpoint spread indicates high relative humidity, while a large dewpoint spread indicates dry conditions

Wet Bulb:

The lowest temperature to which a thermometer can be cooled by evaporating water into the air at constant pressure. This measurement is a holdover from the use of an instrument called a sling psychrometer. To measure wet bulb temperature with a sling psychrometer, a thermometer with a wet cloth covering over the bulb is spun rapidly through the air. If the relative humidity is high, there will be little evaporative cooling and the wet bulb temperature will be quite close to the ambient temperature. Some exercise physiology guides use wet bulb temperature, rather than heat index, as a measure of the safety of exercise in hot and humid conditions.

Barometric Pressure:

The air pressure of your location reduced to sea level. Pressure will change as weather systems move into your location. Falling pressure indicates the arrival of a low-pressure system and expected precipitation or storm conditions. Steady or rising pressure indicates clear weather. A correct altitude must be input for the Kestrel Meter to display barometric pressure correctly.

Altitude:

The distance above sea level. The Kestrel Meter calculates altitude based on the measured station pressure and the input barometric pressure - or “reference pressure”

Density Altitude:

The altitude at which you would be, given the current air density. Often used by pilots to determine how an aircraft will perform. Also, of interest to individuals who tune high performance internal combustion engines, such as race car engines.

Cross Wind:

A crosswind is any wind that has a perpendicular component to the line or direction of travel. This affects the aerodynamics of many forms of transport. Moving non-parallel to the wind's direction creates a crosswind component on the object and thus increasing the apparent wind on the object; such use of cross wind travel is used to advantage by sailing craft, kiteboarding craft, power kiting, etc. On the other side, crosswind moves the path of vehicles sideways and can be a hazard.

Appendix 2: Farm activities



Record taking:



Bedding behaviour:



Salt lick:

Appendix 3: Statistical tables

The tables below are the full initial models of the statistical analysis. FAC1, FAC2 and FAC3 are corresponding to factor one, factor two, factor three of table six to eight in chapter four above respectively.

Parameter Estimates

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test		
			Lower	Upper	Wald Chi-Square	df	Sig.
(Intercept)	3.351	.0510	3.251	3.451	4310.527	1	.000
FAC1_1	.150	.0566	.039	.261	6.973	1	.008
FAC2_1	-.217	.0520	-.318	-.115	17.362	1	.000
FAC3_1	.040	.0535	-.065	.145	.549	1	.459
(Scale)	.431 ^a	.0439	.354	.527			

Dependent Variable: GR

Model: (Intercept), FAC1_1, FAC2_1, FAC3_1

a. Maximum likelihood estimate.

Parameter Estimates

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test		
			Lower	Upper	Wald Chi-Square	df	Sig.
(Intercept)	10.337	.7490	8.869	11.805	190.438	1	.000
FAC1_1	.956	.7510	-.516	2.427	1.619	1	.203
FAC2_1	2.722	.7510	1.250	4.194	13.137	1	.000
FAC3_1	1.036	.7510	-.436	2.508	1.902	1	.168
(Scale)	108.287 ^a	11.0233	88.700	132.198			

Dependent Variable: BR

Model: (Intercept), FAC1_1, FAC2_1, FAC3_1

a. Maximum likelihood estimate.

Parameter Estimates

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test		
			Lower	Upper	Wald Chi-Square	df	Sig.
(Intercept)	2.842	.0174	2.807	2.876	26585.011	1	.000
FAC1_1	-.097	.0174	-.131	-.063	31.356	1	.000
FAC2_1	-.011	.0175	-.045	.023	.414	1	.520
FAC3_1 (Scale)	.019 1 ^a	.0171	-.014	.053	1.242	1	.265

Dependent Variable: FD

Model: (Intercept), FAC1_1, FAC2_1, FAC3_1

a. Fixed at the displayed value.

Parameter Estimates

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test		
			Lower	Upper	Wald Chi-Square	df	Sig.
(Intercept)	9.275	.8700	7.569	10.980	113.653	1	.000
FAC1_1	3.408	.8722	1.698	5.117	15.263	1	.000
FAC2_1	1.236	.8722	-.473	2.946	2.008	1	.156
FAC3_1 (Scale)	.978 146.072 ^a	.8722 14.8697	-.731 119.651	2.688 178.327	1.258	1	.262

Dependent Variable: RT

Model: (Intercept), FAC1_1, FAC2_1, FAC3_1

a. Maximum likelihood estimate.

Parameter Estimates

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test		
			Lower	Upper	Wald Chi-Square	df	Sig.
(Intercept)	46.891	1.2464	44.448	49.334	1415.420	1	.000
FAC1_1	3.955	1.2496	1.505	6.404	10.015	1	.002
FAC2_1	-6.617	1.2496	-9.066	-4.168	28.038	1	.000
FAC3_1	1.464	1.2496	-.985	3.913	1.373	1	.241
(Scale)	299.816 ^a	30.5204	245.587	366.020			

Dependent Variable: OS

Model: (Intercept), FAC1_1, FAC2_1, FAC3_1

a. Maximum likelihood estimate.

Parameter Estimates

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test		
			Lower	Upper	Wald Chi-Square	df	Sig.
(Intercept)	3.409	.0421	3.327	3.492	6556.545	1	.000
FAC1_1	-.217	.0375	-.290	-.143	33.380	1	.000
FAC2_1	.202	.0430	.118	.286	22.003	1	.000
FAC3_1	-.049	.0405	-.128	.031	1.447	1	.229
(Scale)	.318 ^a	.0319	.261	.387			

Dependent Variable: UT

Model: (Intercept), FAC1_1, FAC2_1, FAC3_1

a. Maximum likelihood estimate.

Parameter Estimates

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test		
			Lower	Upper	Wald Chi-Square	df	Sig.
(Intercept)	15.337	.7594	13.848	16.825	407.925	1	.000
FAC1_1	4.192	.7613	2.700	5.684	30.313	1	.000
FAC2_1	.002	.7613	-1.490	1.494	.000	1	.998
FAC3_1	-.079	.7613	-1.571	1.414	.011	1	.918
(Scale)	111.287 _a	11.3288	91.158	135.861			

Dependent Variable: US

Model: (Intercept), FAC1_1, FAC2_1, FAC3_1

a. Maximum likelihood estimate.

Appendix 4: Combine effect of factors loadings from the principle component analysis performed on meteorological modifiers, and from generalized linear models showing the influence of meteorological modifiers on the behaviours and locations of captive guanacos.

meteorological modifiers	Behaviours and locations with + β coefficient	Influence	Behaviours and locations with - β coefficient	Influence
Wind chill+	Resting	Positive	Feeding	Negative
	Open space	Positive	Bedding	Negative
	Under shade	Positive	Under tree	Negative
Temperature+	Resting	Positive	Feeding	Negative
	Open space	Positive	Bedding	Negative
	Under shade	Positive	Under tree	Negative
Heat index+	Resting	Positive	Feeding	Negative
	Open space	Positive	Bedding	Negative
	Under shade	Positive	Under tree	Negative
Wet bulb+	Resting	Positive	Feeding	Negative
	Open space	Positive	Bedding	Negative
	Under shade	Positive	Under tree	Negative
Relative humidity-	Resting	Negative	Feeding	Positive
	Open space	Negative	Bedding	Positive
	Under shade	Negative	Under tree	Positive
Dew point+	Browsing	Positive	Grazing	Negative
	Under tree	Positive	Open space	Negative
Barometric pressure+	Browsing	Positive	Grazing	Negative
	Under tree	Positive	Open space	Negative