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Results for: 2009.mtw

Poisson Regression Analysis: Tiger versus Forest, Urban, Agriculture

Method

Link function	Natural log
Rows used	19

Deviance Table

Source	DF	Seq Dev	Contribution	Adj Dev	Adj Mean	Chi-Square	P-Value
Regression	3	22.823	40.03%	22.8228	7.6076	22.82	0.000
Forest	1	18.492	32.43%	0.7510	0.7510	0.75	0.386
Urban	1	1.922	3.37%	0.3517	0.3517	0.35	0.553
Agriculture	1	2.409	4.23%	2.4095	2.4095	2.41	0.121
Error	15	34.193	59.97%	34.1928	2.2795		
Total	18	57.016	100.00%				

Model Summary

Deviance R-Sq	Deviance R-Sq(adj)	AIC
40.03%	34.77%	54.27

Coefficients

Term	Coef	SE Coef	95% CI	Z-Value	P-Value	VIF
Constant	-0.744	0.379	(-1.488, -0.001)	-1.96	0.050	
Forest	-0.512	0.581	(-1.651, 0.627)	-0.88	0.378	23.43
Urban	0.232	0.381	(-0.514, 0.978)	0.61	0.542	2.87
Agriculture	1.173	0.739	(-0.275, 2.621)	1.59	0.112	26.60

Regression Equation

$$\text{Tiger} = \exp(Y')$$

$$Y' = -0.744 - 0.512\ \text{Forest} + 0.232\ \text{Urban} + 1.173\ \text{Agriculture}$$

Goodness-of-Fit Tests

Test	DF	Estimate	Mean	Chi-Square	P-Value
Deviance	15	34.19284	2.27952	34.19	0.003
Pearson	15	52.69158	3.51277	52.69	0.000

Fits and Diagnostics for Unusual Observations

Obs	Tiger	Fit	SE Fit	95% CI	Resid	Std Resid	Del Resid	HI	Cook's D
3	6.00	6.60	2.57	(3.08, 14.14)	-0.24	-4.72	-4.65	0.997502	2155.66
10	0.00	0.94	0.73	(0.21, 4.30)	-1.37	-2.08	-1.76	0.565951	0.71
11	0.00	1.48	0.73	(0.56, 3.90)	-1.72	-2.15	-1.95	0.363139	0.33
12	0.00	1.10	0.74	(0.30, 4.10)	-1.48	-2.09	-1.81	0.495248	0.53
14	7.00	0.92	0.30	(0.48, 1.75)	4.03	4.25	4.55	0.099167	1.23

Obs	DFITS		
3	-92.8582	R	X
10	-1.6808	R	
11	-1.1503	R	
12	-1.4624	R	
14	2.2190	R	

R Large residual
X Unusual X