Band	Wavelengths (µm)	Color	Pixel Size (approximate)	Tested for model?
1	0.45 - 0.52	Blue	30 meter	Y
2	0.52 - 0.60	Green	30 meter	Y
3	0.63 - 0.69	Red	30 meter	Y
4	0.76 - 0.90	Near Infra-red	30 meter	Y
5	1.55 – 1.75	Short-wave	30 meter	Y
		Infra-red		
6	10.4 - 12.5	Thermal Infra-	60 meter	Ν
		red		
7	2.08 - 2.35	Short-wave	30 meter	Y
		Infrared		
8	0.52 - 0.90	Gray-scale of	15 meter	Ν
		entire visual		
		spectrum		

Table 1: Landsat 7 ETM imagery bands.

Table 2: Most informative mapping model resulting from Tobit Regression (summary output directly from the R statistical package).

	Value	Std. Error	z	g		
(Intercept)	128.2068	5.42e+01	2.37	1.79e-02		
DATA\$NDVIDiffRescaled	-276.9399	1.04e+02	-2.65	8.04e-03		
DATA\$NDVIDiffRescaled2	213.3715	5.31e+01	4.02	5.85e-05		
DATA\$Elev	-0.0278	5.89e-03	-4.72	2.40e-06		
DATA\$rj2	-0.2098	6.78e-02	-3.09	1.98e-03		
Log(scale)	2.9189	5.37e-02	54.32	0.00e+00		
Scale= 18.5						
Gaussian distribution						
Loglik(model) = -835.5	Loglik(in	ntercept on	Ly) = -9	903		
Chisq= 135.04 d	on 4 degree	es of freed	om, p=	0		
Number of Newton-Raphson Iterations: 3						
n= 262						

area	correctly predicted absence	correctly predicted presence	omission (present where predicted absent)	commission (absent where predicted present
whole map $(n = 75)$	19 (25 %)	29 (39 %)	12 (16 %)	15 (20 %)
northern $2/3$ ($n = 42$)	5 (5%)	24 (57 %)	7 (17 %)	9 (21 %)
southern $1/3$ ($n = 33$)	17 (52 %)	5 (15 %)	5 (15 %)	6 (18 %)
area	correctly predicted 0–9 %	correctly predicted 10+ %	omission (predicted 0–9 % where 10+ %)	commission (predicted 10+ % where 0–9 %)
whole map $(n = 75)$	51 (68 %)	13 (17 %)	1 (1 %)	10 (13 %)
northern $2/3$ ($n = 42$)	18 (43 %)	13 (31 %)	1 (2 %)	10 (24 %)
southern $1/3$ ($n = 33$)	33 (100 %)	0 (0 %)	0 (0 %)	0 (0 %)

Table 3: Error of omission and commission summaries for prediction of presence or absence of *B. tectorum* and for prediction below 10 % versus at or above 10 %.

Figure 1: State of Nevada showing approximate Landsat 7 scene coverage. Each square is one scene; heavy line squares show the scenes used for this project.





Figure 2: Imagery for mapping area showing Nevada counties (solid lines) and the Nevada Natural Heritage Program mapping area boundary (dashed line).



Figure 3: sampling plot locations (colored circles). (A) Training plots. (B) Assessment Plots. Nevada counties are shown with black lines, significant roads with brown lines, and the mapping area with a dashed line.



Figure 4: National Elevation Dataset. Color sequence begins with orange at low elevation and proceeds through yellow, sage-green, and pine-green to white at high elevation. NED is displayed with hill-shading to increase visual interpretation.



Figure 5: Heat Index.



Figure 6: NDVI and derived phenology variables. (A) NDVI for the early season image. (B) NDVI for the late season image. (C) NDVI difference. (D) NDVI ratio.



Figure 7: The smoothing kernel and its affect on the estimated percent cover of *Bromus tectorum*, shown for only a small portion of the map. The kernel used replaces the value of each pixel with a weighted average of the pixel and the four adjacent pixels in cardinal directions, where the focal pixel's value is given a weight of 4 while the adjacent pixels are each weighted at one.



Figure 8: Histogram of percent cover for *Bromus tectorum* in sampling plots for (A) training data and (B) assessment data. Each bar covers a 5 percent range.



Figure 9: Estimation cutoffs based on graphing *Bromus tectorum* percent cover at training plots over the average pixel brightness across all 6 bands of the June imagery. Estimations of percent cover are not allowed to fall above the cutoff lines for their given brightness in the June imagery.



Figure 10: Estimated percent cover of Bromus tectorum.



Figure 11: Estimated versus actual percent cover at the 75 assessment sampling plots (points jittered by up to +/- 1 in order to view overlapping points at or near the origin). The line represents the 'ideal' one-to-one relationship.



Figure 12: Point locations for fires from 1980 through 1999 (source: Bureau of Land Management, National Applied Resource Sciences Center).