Event Capacity Calculation

Abstract

Land parcel data for Humboldt County was downloaded and spatially analyzed to find suitable locations for a hypothetical music festival. Certain criteria such as proximity to water source and minimum distance to residential areas were considered when searching for the location. A suitable parcel of land was found, and calculations were performed to determine a safe maximum occupancy figure.

Methods

The first step was to digitize the sections of the land parcel to classify them as parking, event space, and camping zone. After the corresponding shapefiles had been created, geometry calculations were performed to determine adequate maximum occupancy using rough spatial estimates of attendees. For areas housing vehicles, count and capacity were calculated separately.

Parking spaces the equation was $Parking\ Spaces = \frac{Area*0.8}{30} - 20$ and $Capacity = Parking\ Space * 3$

For the Event field the equation was $Capacity = (\frac{(Area-200-500)}{2})$

For camping area the equation was $Count = \left(\frac{(Area-22000-12000)}{800}\right) - 10$ and $Capacity = Count * 8$

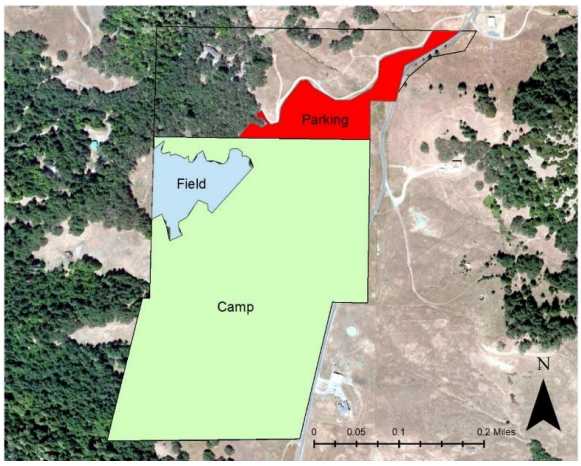
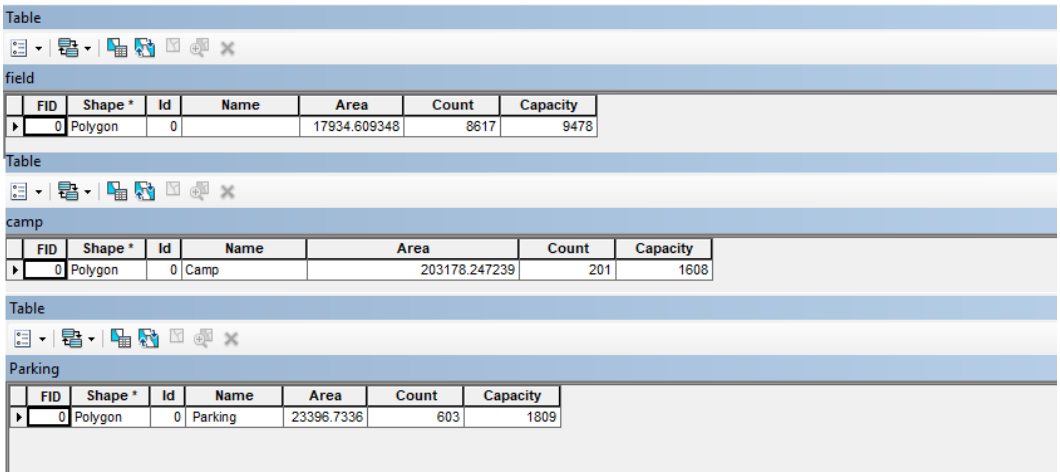


Image 1: Final Map showing field, camp, and parking shapefiles



Table

field

FID	Shape *	Id	Name	Area	Count	Capacity
0	Polygon	0		17934.609348	8617	9478

Table

camp

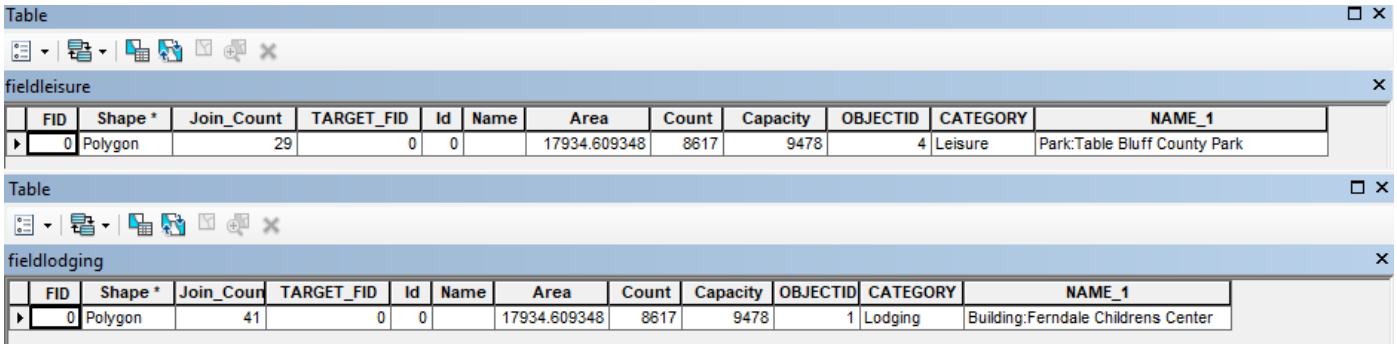
FID	Shape *	Id	Name	Area	Count	Capacity
0	Polygon	0	Camp	203178.247239	201	1608

Table

Parking

FID	Shape *	Id	Name	Area	Count	Capacity
0	Polygon	0	Parking	23396.7336	603	1809

Image 2: Attribute Tables showing count/capacity



Table

fieldleisure

FID	Shape *	Join_Count	TARGET_FID	Id	Name	Area	Count	Capacity	OBJECTID	CATEGORY	NAME_1
0	Polygon	29	0	0		17934.609348	8617	9478	4	Leisure	Park:Table Bluff County Park

Table

fieldlodging

FID	Shape *	Join_Coun	TARGET_FID	Id	Name	Area	Count	Capacity	OBJECTID	CATEGORY	NAME_1
0	Polygon	41	0	0		17934.609348	8617	9478	1	Lodging	Building:Ferndale Childrens Center

Image 3: Top – Leisure spots: Bottom – Lodging spots

The above attribute tables were used in the final determination of safe maximum occupancy. The capacity of the field is over 9000, more than enough to safely contain every possible eventgoer with the placed limits on camping and parking. These numbers were also calculated keeping the maximum lodging capacity of surrounding areas in mind so as not to potentially overwhelm available facilities.