

Michigan Technological University
School of Forest Resources and Environmental Science
Introduction to GIS and Remote Sensing for Natural Resource Management
FW3540
Spring Semester 2009

Dryrun Lab Exam

Introduction

Pictured Rocks National Lakeshore has a fairly comprehensive GIS. The layers presented in this analysis are actual “real world” data layers. You will be answering questions regarding characteristics and features of campgrounds and trails located within the Park. The coordinate system for the Park’s GIS is UTM, Zone 16, NAD 27.

All the data needed for this exercise may be found in the practicelabdata.zip file in the FW3540 folder on the P drive. Copy the file to your home directory and unzip the contents.

Before beginning your analysis, it is recommended that you display all of the layers provided and evaluate each layer’s features as well as its associated attributes. Knowing what the data looks like and what attributes are associated with each layer will greatly facilitate your analysis-guaranteed!

This exercise should be viewed as an opportunity to review past labs and to identify analysis functions you are still not comfortable working with. **Ask** if you are unsure how to complete a task.

Layers for Analysis

parkbnd.shp - Pictured Rocks National Lake Shore Park boundary

vegetation.shp - land use/cover map for the park, interpreted from aerial photography

campground.shp - location of campgrounds and their attributes maintained by the park

P_campgrounds.shp – locations of potential campgrounds (tents only)

parkhydro.shp - hydrology of park subsetted from the Michigan Spatial Data Library data and reprojected to the UTM coordinate system: level 6- lakes and ponds, level 7- rivers, level 8-intermittent streams, level 12- Lake Superior shoreline

trails.shp - trails and their associated attributes.

PicturedRocks_dem.img - 10m dem of the area

Task 1

The first task is to identify potential sites for two new “tents only” campgrounds. These campgrounds **cannot be located** within 1 mile of a trail segment that is actually a roadway that accommodates vehicular traffic. Other site selection criteria include: **must be at least 1 mile** from an existing campground, **must be within** ¼ mile of a hiking trail (non-roadway), **cannot be located** within ¼ mile of a wetland, and **cannot be located** within the “sand dune community” (include both beach strand and dune plant types) features of the vegetation layer. How many potential sites are there? _____ .

How many Total Acres of those potential sites are there? _____.

Create a cartographically correct map showing the potential locations. **Turn in your map next week if you would like 10 points added to your lab point total.**

As part of this task, answer the following questions:

How many acres of wetland are located within ¼ mile of hiking trails? _____

How many acres of sand dune communities (include both beach strand and dune plant communities) are located within ½ mile of hiking trails? _____

How many miles of park trails are actually located on roadways? _____

If we specifically wanted to locate one or both of the campgrounds within the red/white pine cover type, how many acres of red/white pine would be suitable (i.e. meet the above campsite selection criteria)? _____

Task 2

Park personnel would also like some information about existing campgrounds. Please answer the following questions:

Which campgrounds are within 800 meters of the Lake Superior shoreline?

Park staff would also like to know the **types** and **total acreage** of the vegetation surrounding the following campgrounds: Coves, Coves Group, Pine Bluff, Beaver Creek, Trapper's Group, and Trapper's. Treat each campground individually.

The area in which you should quantify the vegetation is a 5000 meter radius (buffer distance equals radius). Do **NOT** include Lake Superior in the land use/cover totals. Combine **Cedar** with **White Cedar** into one cover type and list the cover types in alphabetical order.

Campground	Cover Type Name	Acreage

