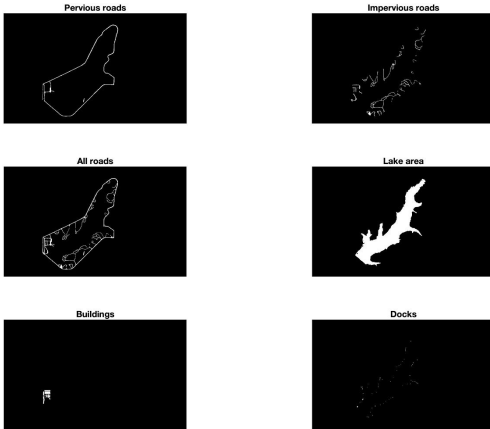


White Paper-Impact of Road Fragmentation on Marion County Lake and Park.

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The purpose of this project was to analyze the impact of the roads surrounding Marion County Lake and collect data to see if there was a relationship between the patches created by



roads on the soil composition and vegetation cover of natural habitats. This research sought to identify areas harmed by cars driving and people walking off of designated paths, to assist in the development of a lake management plan. To start, a satellite image was analyzed using a program called Matlab, in order to classify the various components of the park including:

impervious/pervious roads, docks, buildings, and the total lake area (see maps on left). Key findings showed that there was a significantly higher amount of impervious than pervious roads, and that both roads accounted for 16 percent of the total area within the park.

In order to better understand impacts of park roads in-depth, soil temperature, moisture, and carbon, in addition to vegetation cover can be measured along different distances starting from the center of a road and ending at about 35ft away, at the outside of the patch. Although not enough data was collected in this study to draw conclusions, future studies of various patches will be more promising. The map of patches (image on right) can be a useful tool for identifying the most important sample sites of the 48 different patches surrounding the lake in the future.

