

The National Vegetation Classification Standard Applied to the Remote Sensing Classification of Two Semiarid Environments

Ramsey, Elijah, III,¹ Nelson, Gene,¹ Echols, Darrell,² and Sapkota, Sijan³

¹U.S. Geological Survey, Lafayette, Louisiana

²U.S. National Park Service, Padre Island National Seashore, Texas

³Johnson Controls World Services, Inc., Lafayette, Louisiana

Abstract

The National Vegetation Classification Standard (NVCS) was implemented at two U.S. National Park Services (NPS) sites in Texas, the Padre Island National Seashore (PINS) and the Lake Meredith National Recreation Area (LMNRA), to provide information for NPS Oil and Gas Management Plans. Because NVCS landcover classifications did not exist for these two areas prior to this study, we created landcover classes through intensive ground and aerial reconnaissance that characterized the general landscape features and at the same time complied with NVCS guidelines. The created landcover classes were useful for the resource management and were conducive to classification with optical remote sensing systems, such as the Landsat Thematic Mapper (TM). In the LMNRA, topographic elevation data were added to the TM data to reduce confusion between cliff, high plains, and forest classes. Classification accuracies (kappa statistics) of 89.9% (0.89) and 88.2% (0.87) in PINS and LMNRA, respectively, verified that the two NPS landholdings were adequately mapped with TM data. Improved sensor systems with higher spectral and spatial resolutions will ultimately refine the broad classes defined in this classification; however, the landcover classifications created in this study have already provided valuable information for the management of both NPS lands.