Human impact on the mesquite woodlands essay

Did you know that every person hiking along a recreational trail in a forest setting has a potential impact on wildlife? Not all wildlife reacts the same way to human disturbance. In fact, some species are so highly sensitive that any human activity along a trail can affect their territory selection, their reproductive success and the time and energy they need to go about their daily business of survival Large-scale native woodland loss in the Lower Rio Grande Valley of Texas during the 20th century has been reported in the literature.

Cameron County corroborate previous estimates of native woodlands loss in the Lower Rio Grande Valley, though at a slightly lower percentage (91%). Comparisons with recent land-use and land-cover mapping show that much of the loss was a result of agricultural expansion. Results about changes in land cover for the study period indicate that extensive, highly connected grassland and desertscrub areas are the most vulnerable ecosystems to fragmentation and actual loss due to encroachment of xerophytic mesquite woodland. In the study period, grasslands and desertscrub not only decreased in extent but also became more fragmented. That is, the number of grassland and desertscrub patches increased and their average patch sizes decreased.

In stark contrast, the mesquite woodland patches increased in size, number, and connectivity. These changes have important impact for the hydrology of the region, since the energy and water balance characteristics for these cover types are significantly different. The process demonstrates a simple procedure to document changes and determine ecosystem vulnerabilities through the use of change detection and indicator development, especially

in regard to traditional degradation processes that have occurred throughout the western rangelands involving changes of vegetative cover and acceleration of water and wind erosion. Vegetation change in the American West has been a subject of concern throughout the twentieth century. Although many of the changes have been recorded qualitatively through the use of comparative photography and historical reports, little quantitative information has been available on the regional or watershed scale.

It is currently possible to measure change over large areas and determine trends in ecological and hydrological condition using advanced space-based technologies. Mexico using a system of landscape pattern measurements derived from satellite remote sensing, spatial statistics, process modeling, and geographic information systems technology. arge-scale environmental change and thus, may provide an effective and economical method for evaluating watershed condition related to disturbance from human and natural stresses. The principal degradation processes that have occurred throughout the western rangelands involves : This research is focused on the development of an ability to measure and detect landscape change over a broad watershed area of concern. Subsequently, it provides a method to document changes and determine ecosystem vulnerabilities through the use of change detection and indicator development. The project provides the added benefits of developing methodologies to assess land cover accuracy for the NALC datasets and to develop multi-temporal and multi-scale process models which relate to important selected assessment endpoints such as erosion, flooding frequency, and stream water quality.

This project will also provide a large primary spatial database which can be utilized for both future research and resource management, and thus serves as a prototype for other large-scale western landscape assessment projects. Collectively, the information will improve our ability to interpret landscape indicators as they relate to water resources and ecosystem resilience. The research will benefit a number of different organizations who are principally interested in evaluating present and past cumulative impacts to the watershed and are formulating alternative management strategies to sustain environmental health and economical viability into the future. Lastly, the research is anticipated to improve the ability and methodology of EPA to target and geographically prioritize locations for community-based environmental protection. Assessment of plant invasiveness is done by evaluating biological and ecological characteristics such as germination requirements, growth rate, competitive ability, reproduction methods and dispersal mechanisms. Assessment of plant impacts, however, is determined by the extent to which a plant affects a land manager’s environmental, economic and social resources.

The relative importance of these resources varies depending upon the value people place on them and, as such, the assessment process is subjective. For example, a farmer is likely to place a higher emphasis on the impact of a plant on production (economic resource) than its impact on areas of natural vegetation occurring on the farm. Conversely, a Landcare or Friends group would value environmental or social resources more than economic resources. Recognising that the value of resources vary between different land tenures, plant impact assessments allow a prioritisation of resources by

land managers. Assessments can apply at a local, regional or state level, and the relative values of each resource identified may differ at each level. The impact assessment method used in the Victorian Pest Plant Prioritisation Process uses three broad resource categories: social, environmental and agricultural, each with a number of related attributes.

For example, social resources include such attributes as how the plant affects human access for recreation, or if it creates a health risk due to toxicity or by producing allergens.