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Inventory and Monitoring of Natural Vegetation and Related Resources in an Arid Environment by the Use of ERTS-A Imagery (Proposal No. 311)

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Our investigation involves analysis of ERTS-1 data for a primary and a secondary test site. During this reporting period the vegetation types of the primary site were identified. This represents an extremely important accomplishment on this project; utilization of a vegetation legend is an integral part of all our planned ERTS-1 analyses. In addition, a photo interpretation testing procedure has been designed that will be used to partially achieve the goals stated in Objective 1 of our "Statement of Work."

Paper presented during this reporting period:

"Vegetation-Terrain Feature Relationships in Southeast Arizona"

By David A. Mouat

In: Proceedings, International Conference on Remote Sensing in Arid Lands, November 8, 9, and 10, 1972, University of Arizona, Tucson, Arizona.

(E72-10360) INVENTORY AND MONITORING OF NATURAL VEGETATION AND RELATED RESOURCES IN AN ARID ENVIRONMENT BY THE USE OF ERTS-A B.J. Schrupf (Oregon State Univ.) 31 Dec. 1972 4 p CACL 08F G3/13 00360 N73-14348 Unclas

Inventory and Monitoring of Natural Vegetation and Related Resources in an Arid Environment by the Use of ERTS-A Imagery (Proposal No. 311), Barry J. Schrupf, Oregon State University, Corvallis, Oregon.

The following significant accomplishments were realized during this reporting period. Field data collected on 500 sites prior to the start of the current project was analyzed to establish a vegetation classification for our primary test site. It is an area of approximately 3200 square miles with Tucson, Arizona, in the northwest corner and Willcox Playa in the northeast. The vegetation of this region includes representatives of, or shows the influences of, the Sonoran and Chihuahuan Deserts, shortgrass prairie, Arizona chaparral, juniper-oak woodland, and pine forest. Twenty-nine vegetation types have been recognized; they are listed in Figure 1.

Figure 1. Vegetation Types of the Tucson Study Area

*Larrea tridentata* with or without annuals

*Larrea tridentata* with *Prosopis juliflora*, *Zinnia pumila*, and/or *Opuntia* (chollas)

*Cercidium microphyllum* and *Cereus giganteus* often with *Encelia farinosa* and *Opuntia* and without *Franseria deltoidea*

*Atriplex canescens* and *Prosopis juliflora*

*Coldenia canescens*, *Zinnia pumila*, *Fouquieria splendens*, and *Tridens pulchellus*

*Prosopis juliflora* and *Haplopappus tenuisectus* with *Opuntia* (chollas)

*Prosopis juliflora* and *Haplopappus tenuisectus* without *Opuntia* (chollas)

*Acacia constricta* and *Calliandra eriophylla* usually with *Prosopis juliflora* and *Fouquieria splendens*

*Acacia constricta* and *Prosopis juliflora* usually with *Opuntia* and without *Calliandra eriophylla*

*Acacia vernicosa*, *Flourensia cernua*, and *Larrea tridentata*, without *Rhus microphyllum* and *Dalea formosa*

*Acacia vernicosa*, *Flourensia cernua*, *Larrea tridentata*, and *Rhus microphyllum*

*Aloysia wrightii* usually with *Fouquieria splendens*, *Acacia constricta*, and *Opuntia* (prickly pear)

*Mortonia scabrella* with *Rhus choriophylla*; often with *Cercocarpus brevifolius*

*Mortonia scabrella* without *Rhus choriophylla*; often with *Larrea tridentata*, *Parthenium incanum*, and/or *Zinnia pumila*

*Prosopis juliflora* and *Bouteloua* without *Quercus* and *Juniperus*

*Prosopis juliflora* and *Bouteloua* with *Quercus* (usually *Q. oblongifolia*) and/or *Juniperus*

*Bouteloua* and *Aristida* with *Nolina microcarpa*

*Bouteloua* and *Aristida* without large shrubs, *Nolina microcarpa*, or *Yucca*

Figure 1. (Continued)

*Bouteloua* and *Calliandra eriophylla* usually with *Prosopis juliflora*  
and *Aristida*, and without *Acacia constricta*

*Prosopis juliflora* bosque

*Sporobolus wrightii* often with *Prosopis juliflora*

*Hilaria mutica* and *Prosopis juliflora*

*Cercocarpus brevifolius* with *Juniperus deppeana* and/or *Pinus cembroides*  
and usually with *Quercus*

*Quercus*, *Arctostaphylos pungens*, *Pinus cembroides*, *Juniperus deppeana*;  
without *Mimosa biuncifera*

*Quercus* and *Arctostaphylos pungens* usually with *Mimosa biuncifera*;  
without *Pinus cembroides*

*Cowania mexicana* usually with *Juniperus*

*Quercus* and *Mimosa* without *Arctostaphylos pungens* or *Cercocarpus*  
*brevifolius*

*Pinus*, with or without *P. cembroides*, often with *Pseudotsuga menziesii*,  
*Quercus hypoleucoides*, and *Q. gambelii*

*Populus fremontii*, *Platanus wrightii*, and/or *Fraxinus velutina*

