

# UA Maps Aid Environmental Studies of West Phoenix Area

Land-use maps created by University of Arizona remote sensing experts laid the foundation for ongoing studies of a West Phoenix, Ariz., area reported to have high rates of cancer and birth defects.

In June 1987, a series of articles in the *New Times*, a Phoenix tabloid, told of an unusually high number of childhood cancers occurring in the Maryvale area of the city. The stories suggested Maryvale residents may have been exposed to hazardous substances that may have been introduced by earlier agricultural, industrial or waste disposal use.

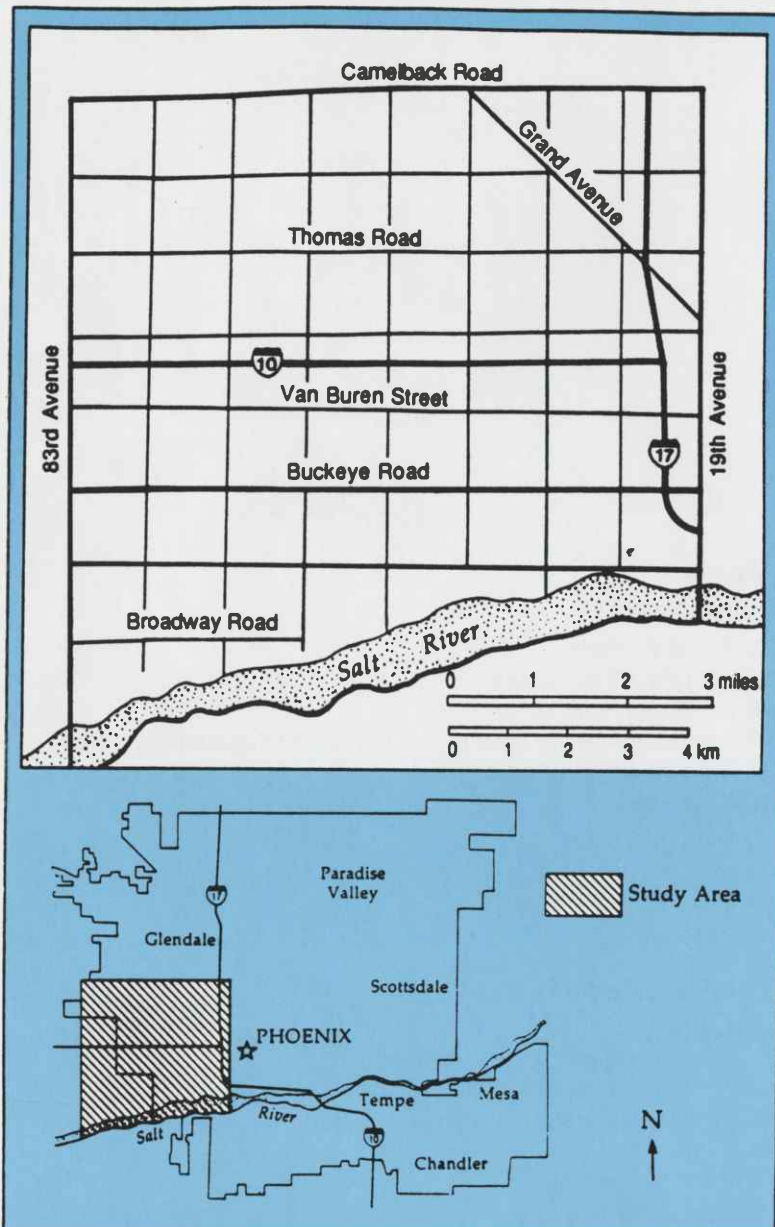
*Before a relationship between high cancer rates and the environment could be established, state agencies needed to know how the land had been used in the past.*

Later that year, the Arizona Department of Environmental Quality began an environmental study of the air, water and soil in Maryvale. But before any relationship between the incidence of cancer and the environment could be established, ADEQ needed to know how the 59-square-mile piece of land had been used over a 30-year period. The mainly residential Maryvale area, which runs from 19th Avenue to 83rd Avenue and from Camelback Road to the Salt River, was primarily agricultural land 30 years ago.

ADEQ contracted with the Arizona Remote Sensing Center in the UA Office of Arid Lands Studies to create land-use maps from standard aerial photos taken by the U.S. Department of Agriculture and the Arizona Department of Transportation from 1954 to 1985.

The remote sensing study analyzed and mapped the photographs in five-year increments.

*(Continued on next page)*



The 59-square-mile Maryvale area in West Phoenix has been reported to have high rates of cancer and birth defects.

Former research associate Christopher Mack, who managed the project, fashioned a system that classified the Maryvale land into eight major types of use: agricultural; residential; commercial; industrial; transportation; public; waste disposal; and miscellaneous. The system was designed to identify potential problem areas, such as former crop dusting airfields where now-banned pesticides may have been dumped, or excavated areas where barrels of toxic chemicals may have been buried.

*The land-use maps were used by ADEQ to design a soil-sampling study for the Maryvale area.*

By digitizing the information into a computer geographic information system (GIS), the UA remote sensing group provided ADEQ with a series of co-registered, land-use maps all the same scale.

The GIS data then were transferred to the Arizona State Land Department GIS to establish a comprehensive data base for the study area.

"Once the information is loaded into a computer, it takes merely two or three lines of code to tell the

