SERDP
Strategic Environmental Research and Development Program

The Evolving Urban Community and Military Installations: A Dynamic Spatial Decision Support System for Sustainable Military Communities

Conservation
CS-1257

Background:

Extreme urban growth and the resultant patterns of development outside military installations are undermining the military's ability to maintain mission focus. Some military installations' economic and environmental contributions to the local community are becoming outweighed by perceived incompatibilities such as noise, dust, shared resource competition, land use, land value, and land availability. These issues arise as the local community expands and available resources become scarce.

Objective:

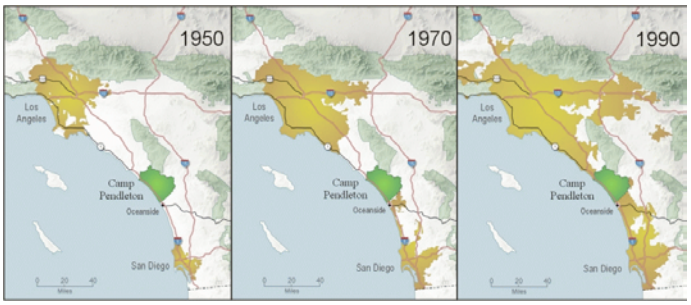
The main objective of this project is to identify and address the gaps in basic understanding of the risks to military operations and training lands associated with land use transformation outside the military installation boundary. The aim is to improve the overall sustainability of military installations through the application of data and predictive models for urban change and environmental impact assessments. Once the fundamental knowledge gaps have been filled, the Spatial Decision Support System (SDSS) can be applied to installations that have been identified as at-risk from rapid exogenous ubranization.

Summary of Process/Technology:

The approach expands on work currently funded by the National Science Foundation (NSF) on the **L**and Use **E**volution and Impact **A**ssessment **M**odel (LEAM). This project will create a military specific model known as **M**ilitary **L**and Use **E**volution and Impact **A**ssessment **M**odel (mLEAM). The mLEAM environment will be used to graphically analyze simulations of land use scenarios that include inside the military installation fence-line and outside the fence-line dynamics. The SDSS includes the development of spatial, societal, and environmental impact assessments. The creation of installation sustainability indicators, using both mission and ecological oriented criteria, will be established.

Benefit:

The outcome of this project will provide the Army's major Commands with an analytical and visually oriented methodology for determining where the threat of urban growth might negatively impact the military mission, how this threat will impact military operations, and possible strategies for mitigating these impacts. This is an important step toward determining and analyzing the risks to the military and the conflicts that may arise from exogenous and endogenous land-use transformations.



Urbanization pressures at Camp Pendleton, CA.

Accomplishments:

This project began in FY 2002. Accomplishments will be noted upon completion of the project.

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REVISED 7/10/02