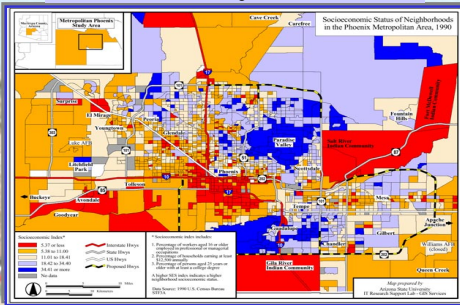


# THE HUMAN DIMENSIONS OF ECOLOGICAL CHANGE

C. L. Redman and P. Gober

With contributions by B. Bolin, E. K. Burns, D. Brewer, J. Fry, C. Gross, J.M. Grove, E. Hackett, D. Hope, G. Krutz, L. Kuby, E. Matrangola, A. Nelson, L. Nogue, M. O'Donnell, D. Pijawka, E. Sadalla, D. Scotte, S. Smith, G. Woodall

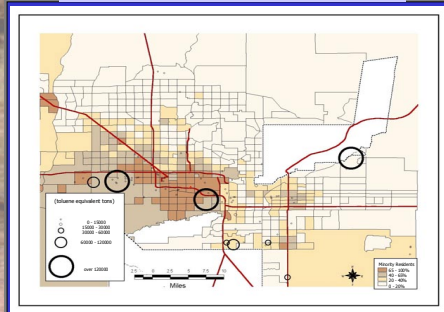
## Interaction: Land Cover Social Processes: Demography & Economy



**Social Area Analysis of Vegetation in the Phoenix Metropolitan Area**  
A. Nelson, D. Hope, C. Gries

This study analyzes the relationship between socio-demographics in Phoenix-area neighborhoods and vegetation density, diversity, and biovolume. The map shows the socioeconomic status of Census block groups (neighborhoods).

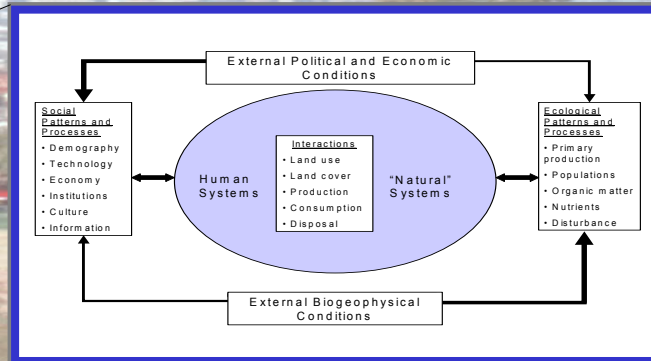
## Interaction: Disposal Social Processes: Technology & Culture



**Map of Maricopa County Weighted TRI Air Emissions in Toluene Equivalents**

B. Bolin, E. Hackett, A. Nelson, D. Pijawka, E. Sadalla, D. Scotte, M. O'Donnell, S. Smith, E. Matrangola, D. Brewer

This project illustrates the co-association of social patterns with perceived and real environmental risks of toxic releases. This map locates Toxic Release Inventory air emissions weighted by toluene equivalents and the % of non-white population by Census tract. Central and southern urban areas exhibit a pattern of very toxic releases; a number of suburban facilities also exhibit significant tonnages.

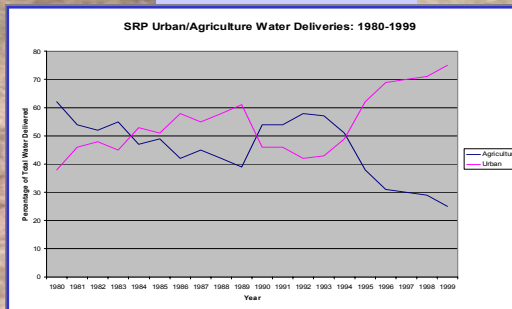


**An Integrated Model of the Human Ecosystem**

C.L. Redman, J.M. Grove, and L. Kuby

Urban ecological systems present multiple challenges to ecologists—pervasive human impact, the extreme heterogeneity of cities, and the need to integrate social and ecological approaches, concepts, and theory. Disciplinary training encourages us to treat elements of human and ecological systems as distinct. In this integrated model of the human ecosystem, urban LTERs emphasize *interactions*, the specific activities that mediate between the social and natural elements of the human ecosystem. The sample of CAP LTER projects on this poster focus upon these interactions.

## Interaction: Consumption Social Process: Institutions

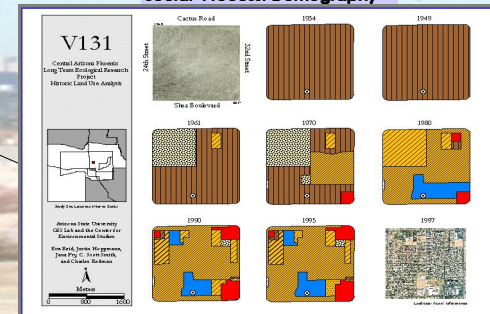


**Dynamic Political Institutions and Water Policy in Central Arizona-Phoenix**

G. Krutz, G. Woodall

This study focuses upon the impact of institutions that link individuals with environmental processes of special import, such as water policy; the chart represents a 20-year span of one institution under study, the Salt River Project, and its changing water deliveries.

## Interaction: Land Use Social Process: Demography

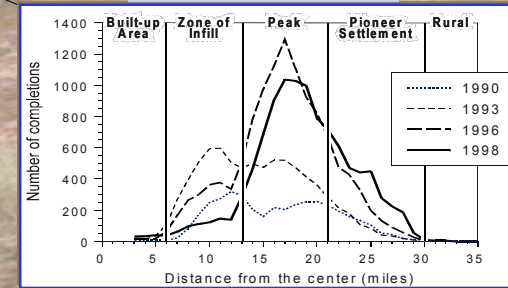


**Historic Land-Use Project, Phase II**

J. Fry, L. Nogue, C.L. Redman, S. Smith, G. Woodall

This study traces land-use change in Central Arizona-Phoenix for each decade since the 1930s. Detailed information is collected from aerial photos on every tract of land in the square mile area around each of the 200 point survey locations. The above sequence portrays the changing land-use patterns in one North Phoenix location.

## Interaction: Land Cover Social Process: Economy



**The Size and Shape of Phoenix's Urban Fringe**

P. Gober and E.K. Burns

This graph tracks the annual changes in amount and location of residential fringe development from 1990-1998, illustrating that new development covers a wide geographic area during early phases of the business cycle and moves outward, but becomes more concentrated at later phases. The urban fringe project has shown that growth at the fringe occurs in waves of new housing development that influence microclimatology, runoff patterns, and ecological processes.