

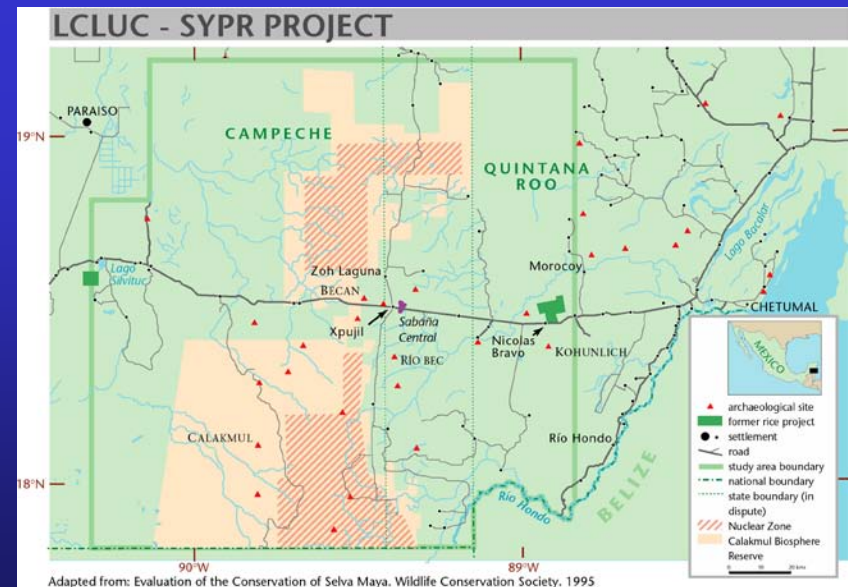
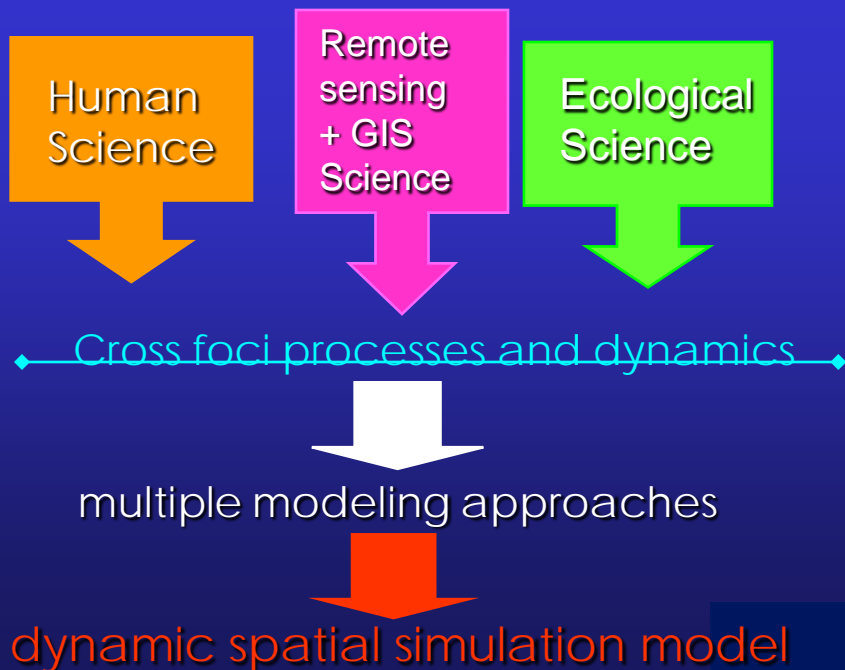
Land-Cover and Land-Use Change in the Southern Yucatán Peninsular Region

LCLUC - SYPR

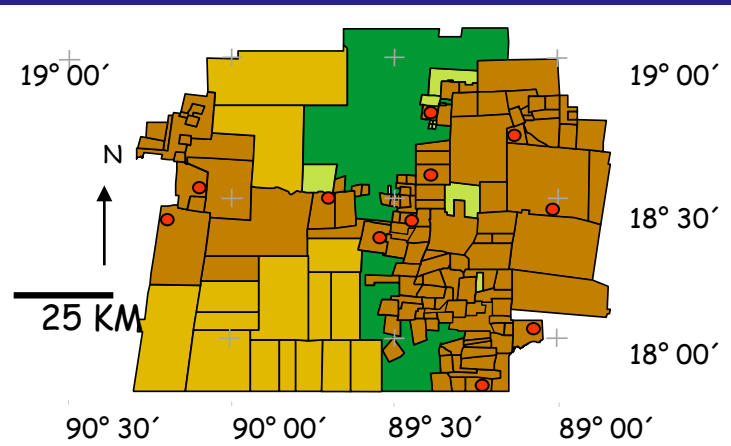


LCLUC-SYPR seeks

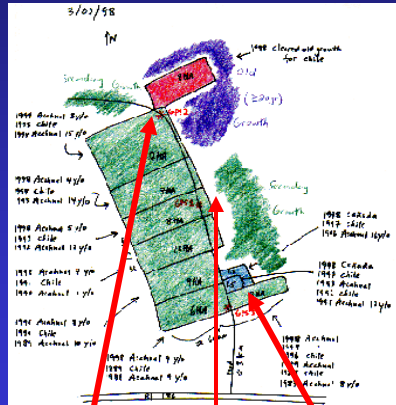
- > to identify the trajectories and pace of various land-use/cover changes in the region
- > to develop detailed understanding and explanations of causes and consequences of these changes
- > to develop a suite of models capable of explaining and projecting spatially explicit use and cover changes
- > to do all the above through integrative of studies employing historical-empirical narratives, behavioral, structural and ecological theory, and remote sensing and GIS analysis.



Mexican policy changes, differences in tenure [g = national forest; b = ejido; gold = forest extensions; lg = private], and infrastructures = primary drivers of pace, amount, and location of deforestation.



Household surveys = 180 sketch maps of plot use linked to imagery for econometric analysis and enhanced classification



GPS1

GPS2

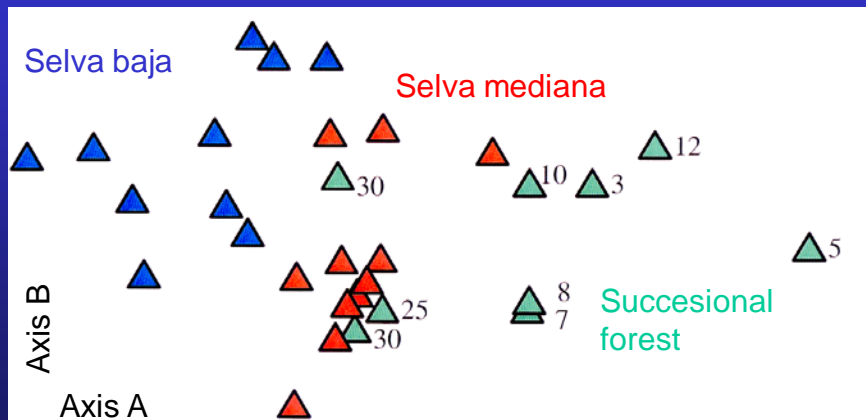
GPS3

GPS1

GPS2

GPS3

Three distinct forest types with significant increase in successional growth



Primary Axes of Variation in Detrended Correspondence Analysis

Linking household/historical & ecological work to advances in imagery analysis = level of classification detail required for LCLUC modeling

Clouds, Cloud Shadows, Urban, Roads and Quarries

Water, Savanna, Herbaceous Wetland Vegetation

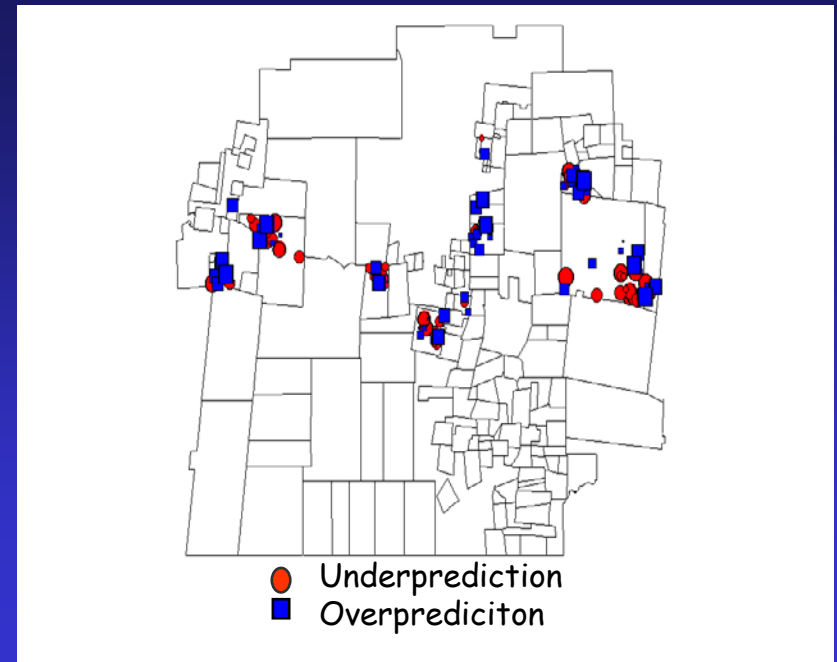
Seasonally Inundated Forest & Well-drained Upland Forest

Cropland, Pasture, Successional Forests <herbaceous, shrub-dominated, & arboreal> & Pteridium (bracken fern)

Enhanced Survey Regression Model of Deforestation: A Trial – Dissaggregated Approach

Aim: to model the amount of deforestation associated with individual farmers (*ejidatarios*).

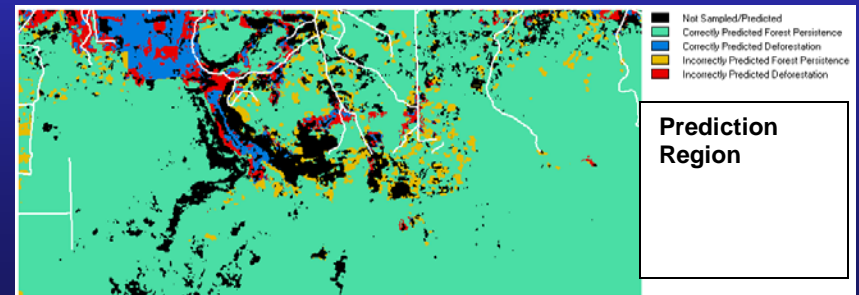
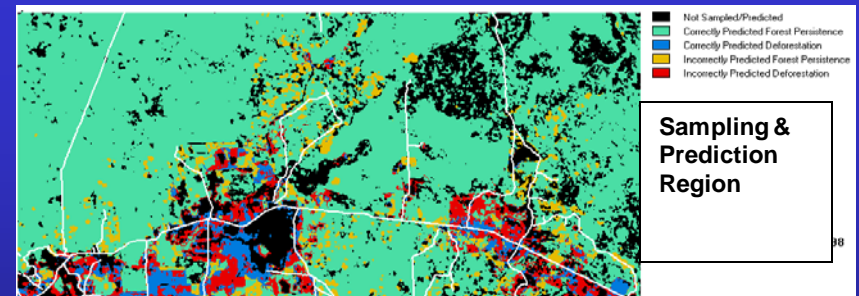
The results show that location variables in this model are not statistically significant (as in the aggregate model below); however, variables consistent with behavioral themes, such as off-farm income and livestock sold are.



Binomial Logit Model: A Trial – Aggregated Approach

Aim: to model the location of forest persistence & change.

The results show that most location variables statistically significant & their coefficients remain constant over time. The amount of change is predicted correctly, but red and yellow pixels [incorrectly predicted] indicate work required to improve the approach.



Crosstabulate Predicted Change with Actual Change