China Linpan Landscape Ecology Assessment

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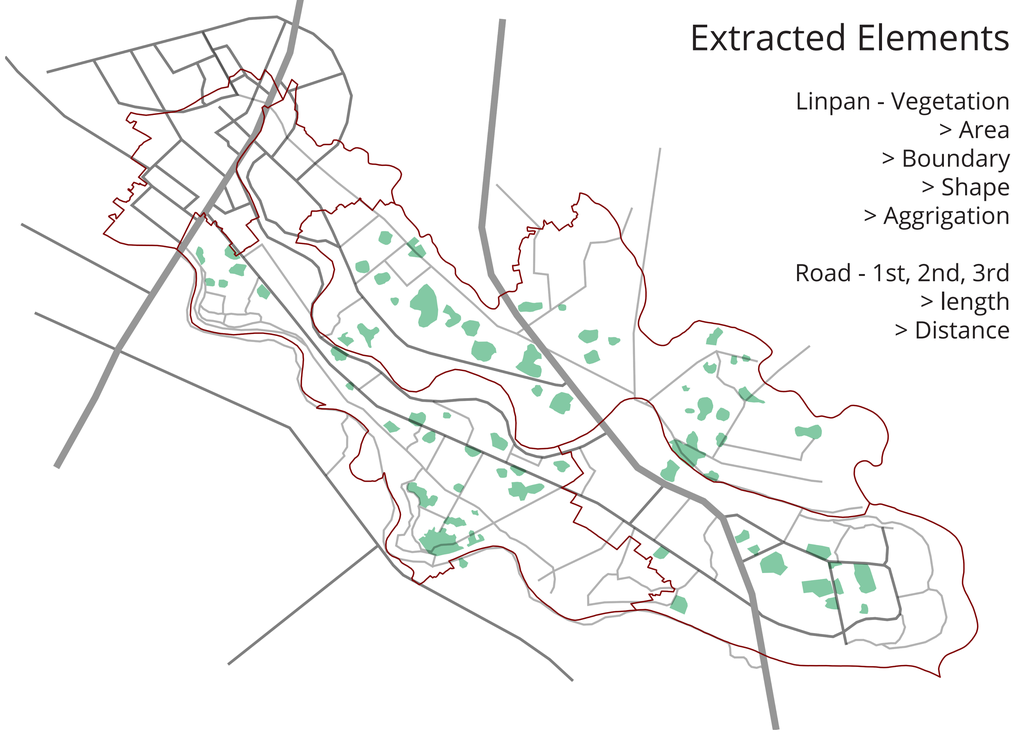
Introduction

Linpan is an unique landscape in Chengdu Plain of China, with scattered living and producing units and has high resilience for long history. However, this landscape is decreasing after China's urbanization process started from 1990's. Our research is to use GIS as a monitoring tool to do ecology assessment for linpan and find the relationship between the changes of linpan and urbanization. The final purpose is to arise the local government attention for linpan and develop a basic principle for future preservation work.

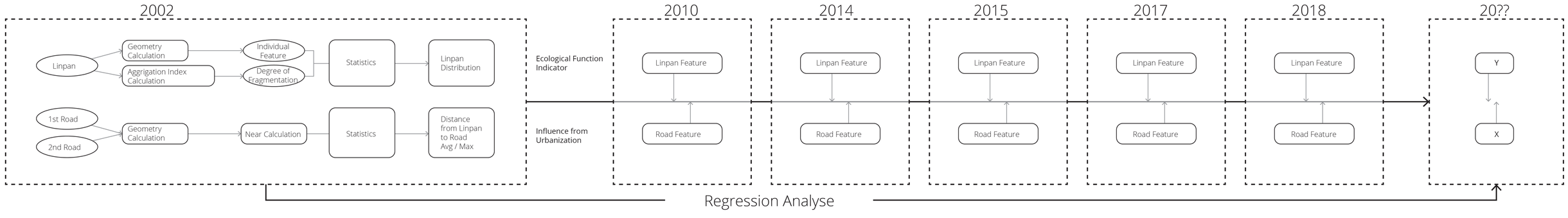


Extracted Elements

Linpan - Vegetation
> Area
> Boundary
> Shape
> Aggrigation

Road - 1st, 2nd, 3rd
> length
> Distance

Linpan Assessment Model

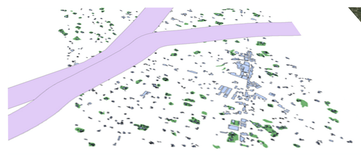


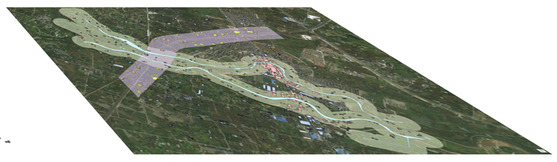
2002

2010

Working Process

Step 1 - Extract Basic Elements

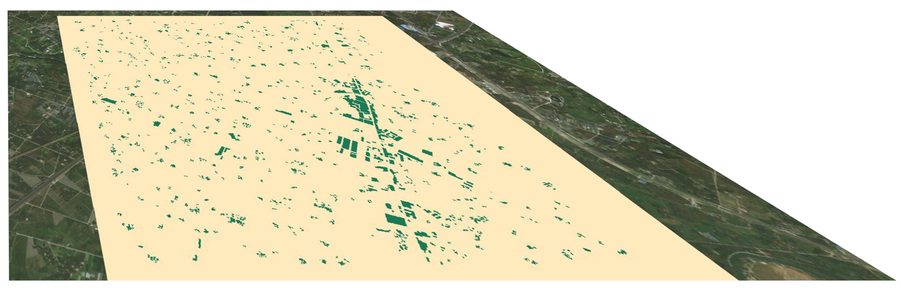




Step 2 - Basic Calculation

Number of Patches	The number of patches in each land use	134
Patch Density	Number of patches per 100 ha	1.34
Largest Patch Index	Area of the largest patch/total area*100	1.194
Total Edge	Measures the total edge	815719.73 m
Edge Density	Total length of all edge segments per hectare	865.25
Mean Patch Area	The average mean surface of patches	73851.28m2
Total Class Area	Measures the total area	9953760m2
Percentage of Linpan Landscape	Measures the percentage of landscape	8.288%
Fragmentation	N-1/C	2884
Linpan Density		1.75unit/km2

Step 3 - Context Map



Step 4 - Aggregation Index Calculation

Step 5 - Regreggation Analyze

	Nonstandardized Coefficients		Standardized Coefficients	t	p	VIF	R2	Adjusted R2	F
	B	Standard Error	Beta						
Constant	1555362.1	351033.265	-	4.431	0.0113	-	0.93	0.892	44.981
Total Length of Secondary Road	-22.585	10.644	-0.728	-2.122	0.101	1			
Dependent Variable: Linpan Area									
* p<0.05 ** p<0.01									