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Kathmandu, Nepal 14–16 November

REGIONAL CONFERENCE 2024

Climate Responsive Land Governance and Disaster Resilience: Safeguarding Land Rights



Exploring Urban Greenery: A Case Study of Roadside Trees in Pokhara Metropolitan City

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*I am Enabling
Transformation with GIS*



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Introduction

- Urban greenery, encompassing various elements such as parks, gardens, and street trees, constitutes an integral aspect of urban landscapes worldwide (Smith et al., 2016; Zhou et al., 2019).
- Roadside trees are important components of urban ecosystem.
- Roadside trees in urban environments contributes to creating healthier cities.
- Our study focuses on the vital role of roadside trees in urban greenery management.
- Our Objective was to evaluate the condition, maintenance, and proximity of roadside trees to electric wire corridors in Pokhara Metropolitan City, Nepal.
- Targeted Pokhara Metropolitan City.



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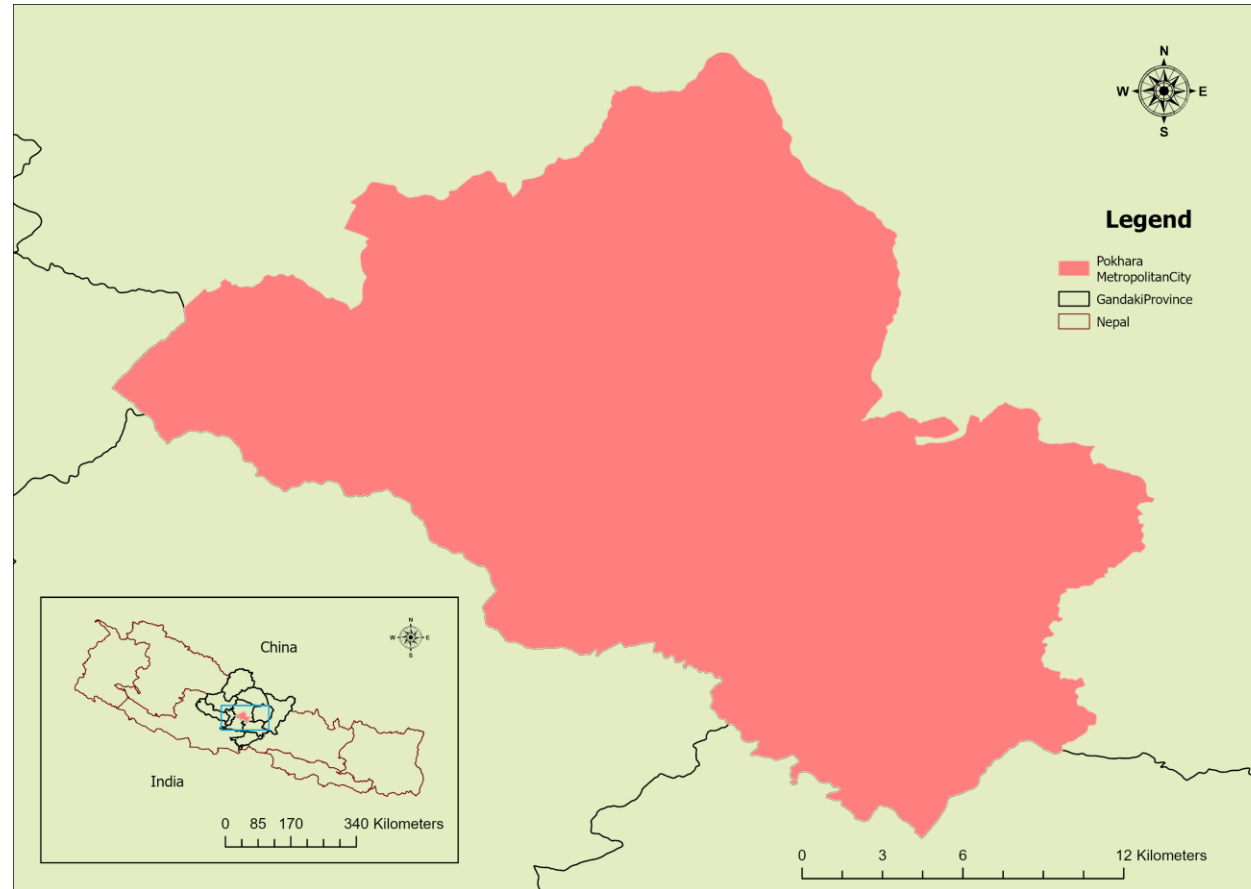


Study Area

- Pokhara Metropolitan City,
- latitude 28.2393° N,
- longitude 83.9956° E,
- 33 wards

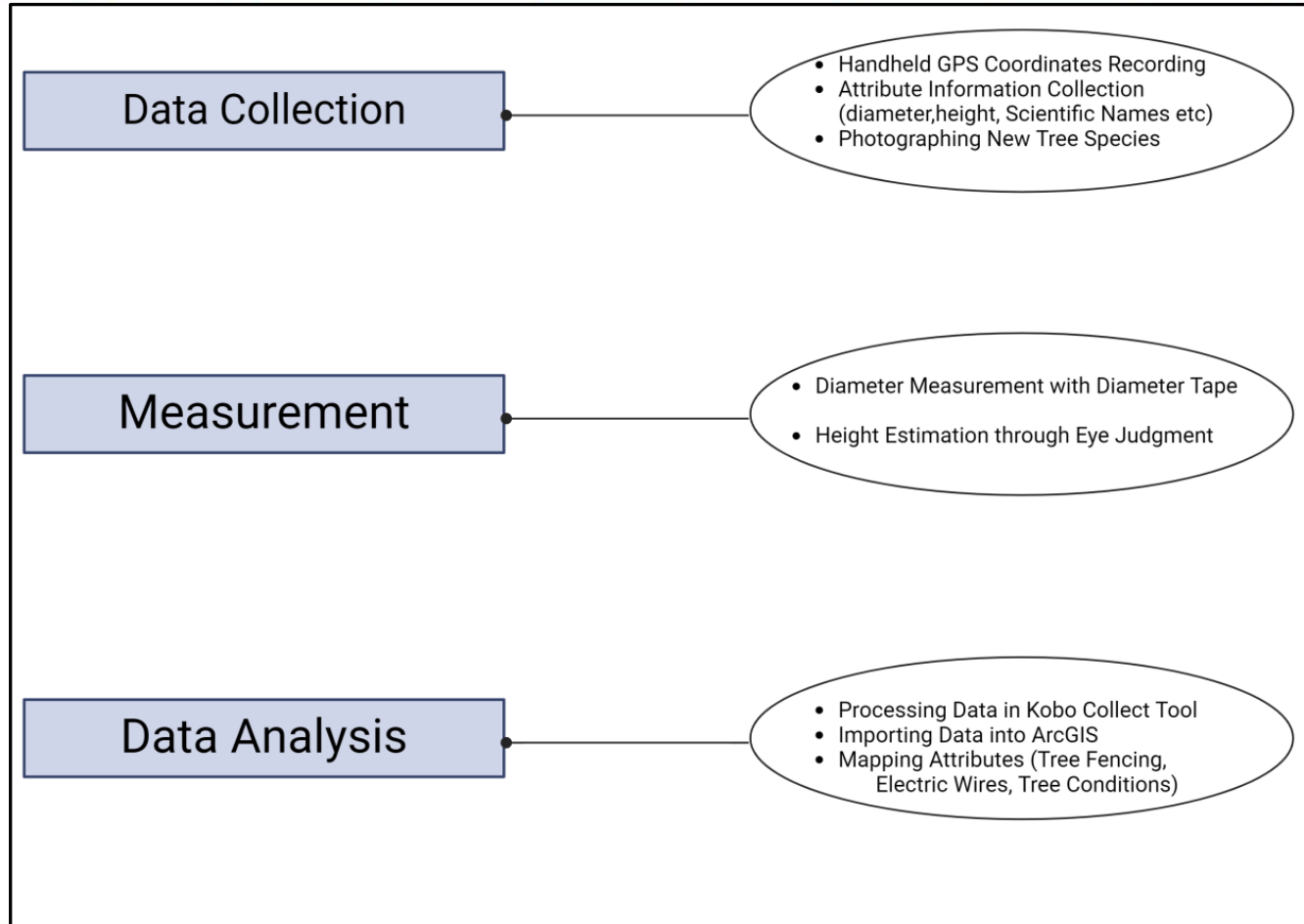
Road Sections

Bagar – Mahendrapool
 – Naya Bazar –
 Mustang chowk –
 Rastra Bank Chowk –
 Lake side area Hallan
 Chowk – zero km –
 Shrijana chowk –
 Bindyabasini chowk





Methodology





Result

Dataset Preparation

- 1435 trees recorded after data processing,
- Majority of trees were Ashoka, Dhupi and Kapur,

S.N.	Latitude	Longitude	ScientificName	Fencing	Categorey	Chautaro	Electricwire	Condition
1	28.24189	83.98877	<i>crapemyrtles</i>	Yes	Small	Yes	Yes	Good
2	28.23377	83.99022	<i>Nyctanthes arbor-tristis</i>	No	Medium	Yes	No	Good
4	28.23078	83.99127	<i>Cinnamomum camphora</i>	No	Medium	No	Yes	Good
5	28.24173	83.98874	<i>Schizolobium parahyba</i>	No	Medium	No	No	Good
6	28.23073	83.99127	<i>Schizolobium parahyba</i>	No	Medium	Yes	Yes	Good
7	28.23061	83.99131	<i>Cinnamomum camphora</i>	No	Medium	Yes	Yes	Good
8	28.24099	83.98879	<i>Schizolobium parahyba</i>	Yes	Medium	Yes	Yes	Good
9	28.23078	83.99128	<i>Cinnamomum camphora</i>	Yes	Small	No	No	Good
10	28.23075	83.99119	<i>Cinnamomum camphora</i>	No	Medium	No	Yes	Good





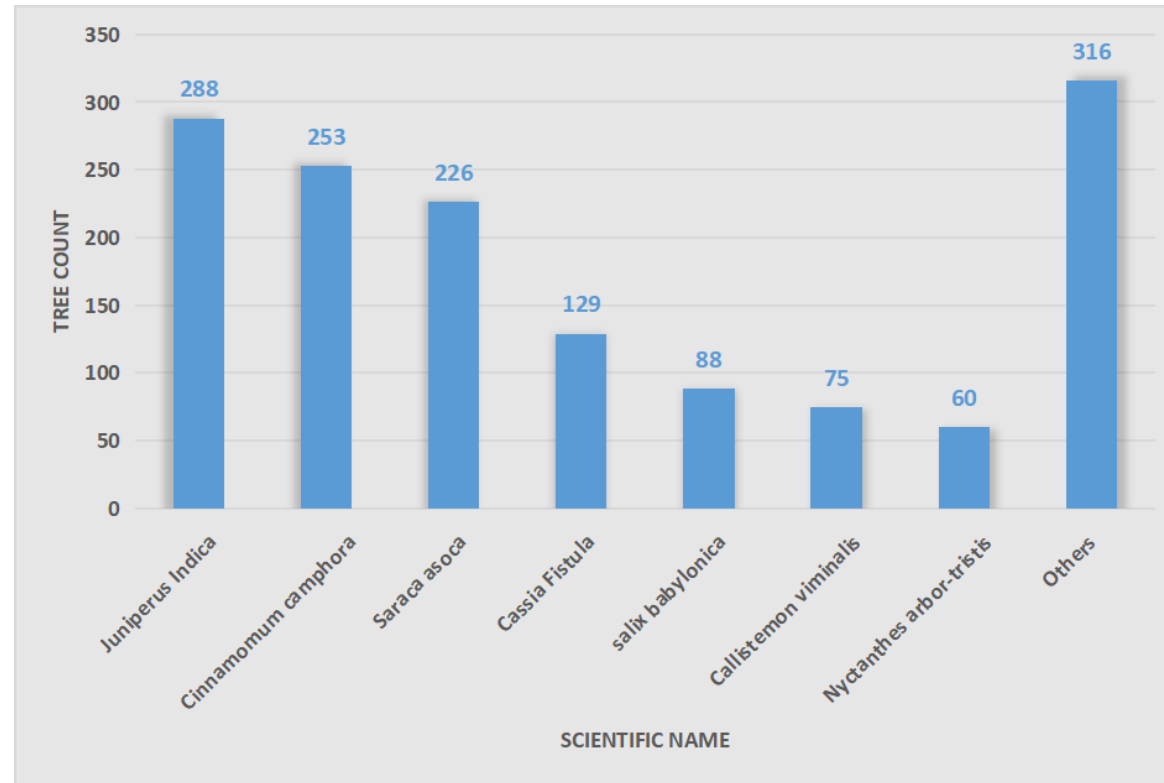
Key Attribute Visualization

- Almost 50 trees species counted,
- 288 *Juniperus indica*, followed by 253 *Cinnamomum camphora*, and 226 *Saraca asoca*. Additionally, 316 trees were recorded as "others," consisting of *Areca catechu* (39), *Ficus religiosa* (35), *Cinnamomum tamala* (32), among others.
- Trees with height < 3 meters (635 out of 1435) categorized as small, with height 3-10 meters (658) categorized as medium and height >10 meters (142) categorized as large,
- 48 out of 1435 trees has got chautaro structure,
- 256 trees out of 1435 trees were clearly touching electric wires,
- Out of 1435 trees surveyed, approximately 58% were provided with fencing





- 1229 trees were in good condition,
- Approximately 9% (136 trees) required further maintenance,
- 56 trees were chopped down and
- 14 out of 1435 trees were dead and must be replaced by new plants



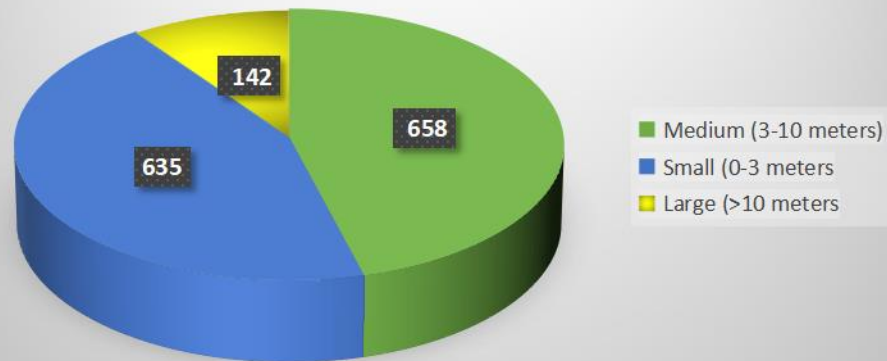
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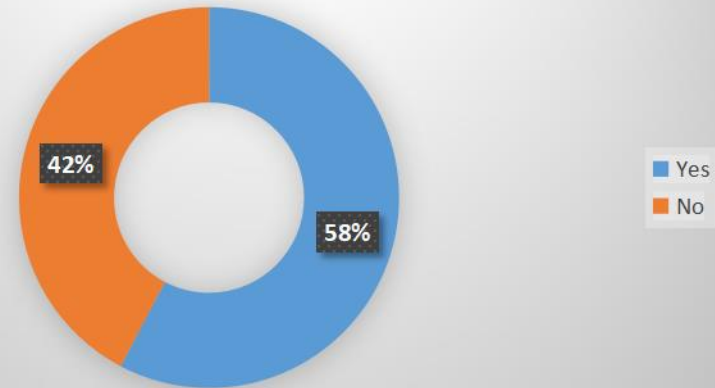
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Height Category



Presence of Fencing



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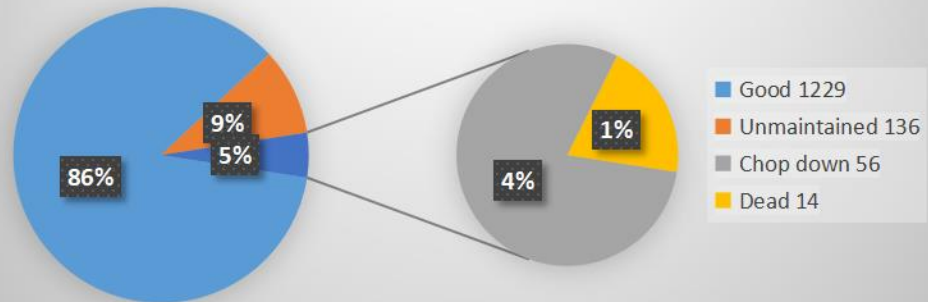


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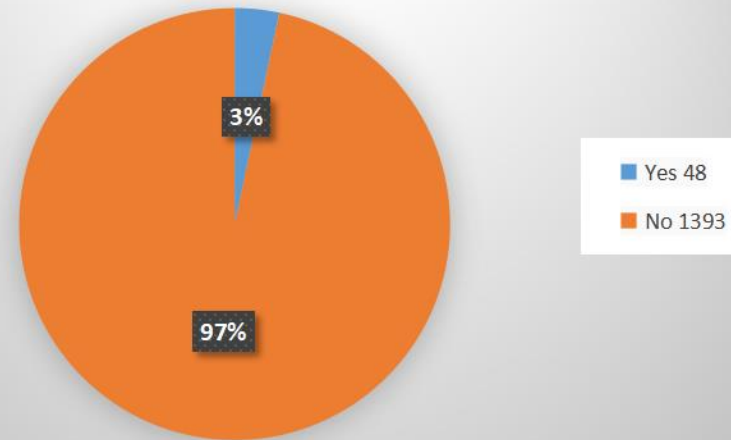


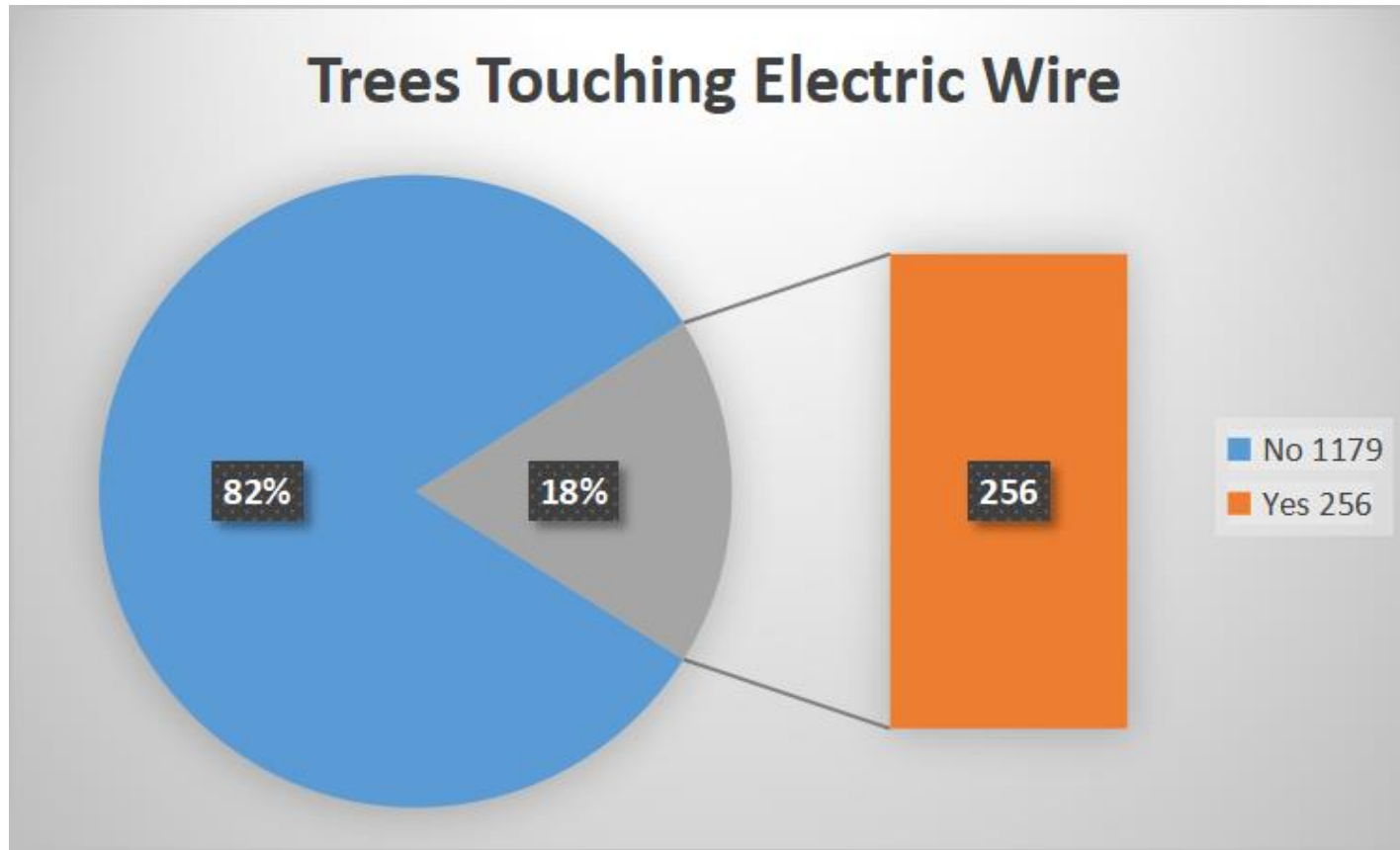


Overall Tree Condition



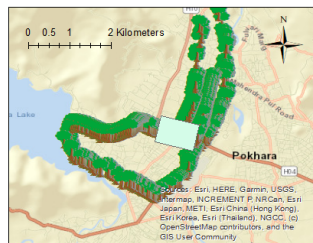
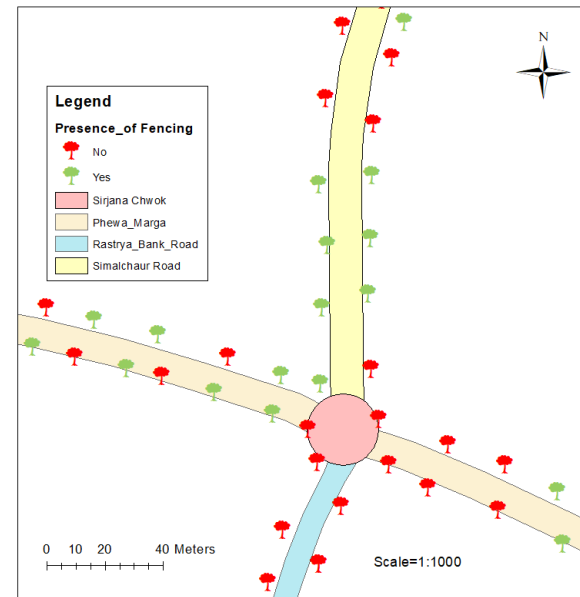
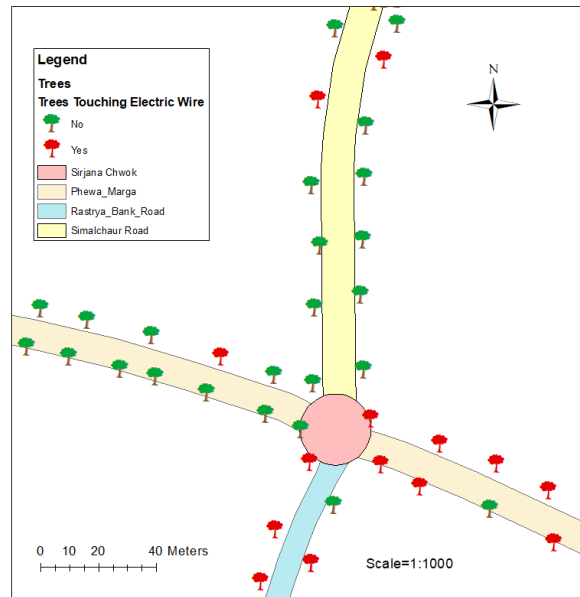
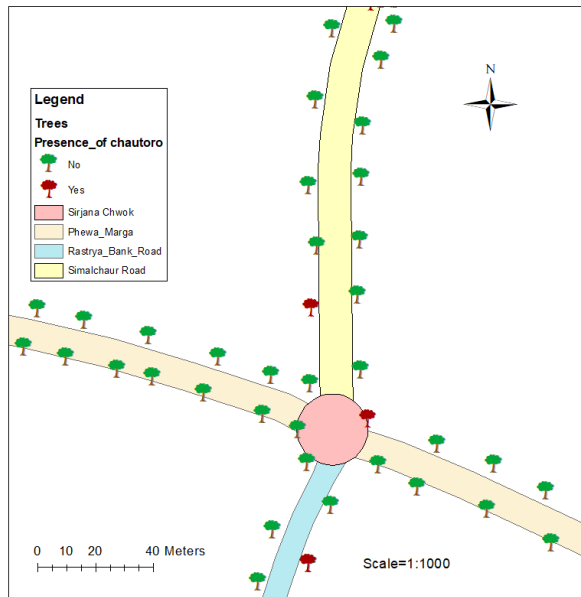
Presence of Chautaro



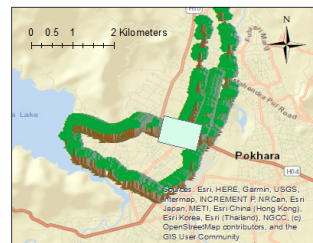




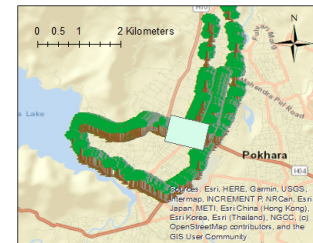
Map Preparation



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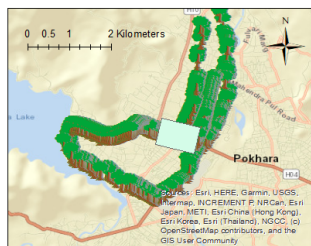
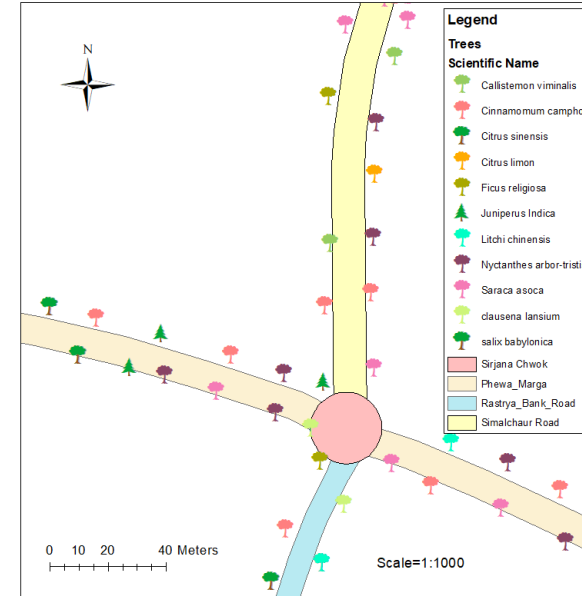
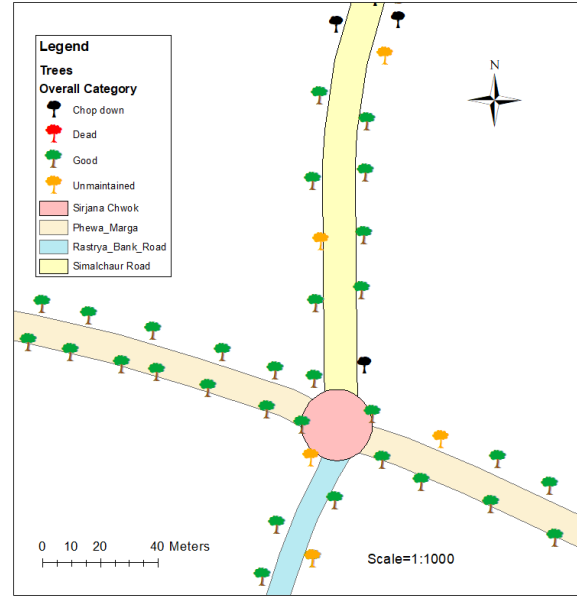
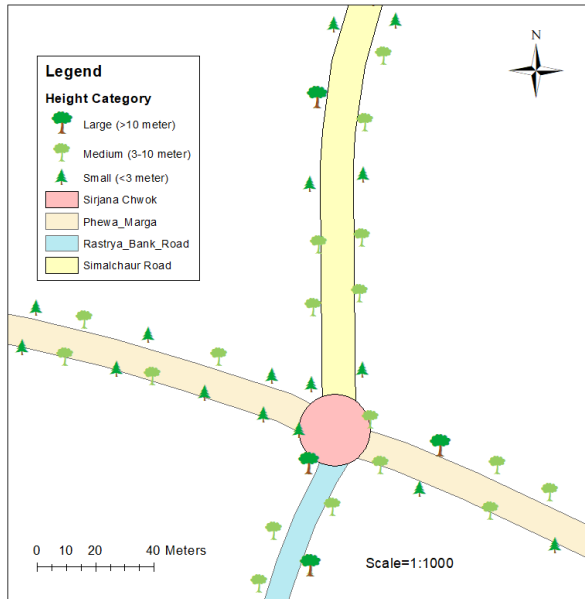
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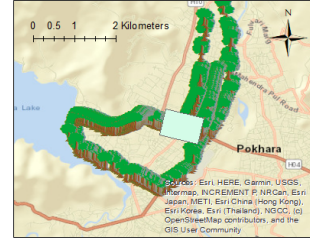
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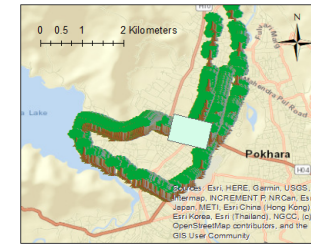
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Key Findings:

- Identifies significant presence of trees in good condition, with dominant species including Dhupi, Kapur, and Ashoka.
- Noted a notable percentage of trees requiring maintenance.
- Highlighted substantial number of trees dangerously close to electric wires, emphasizing safety hazards.

Local Name	Scientific Name
Dhupi	<i>Juniperus Indica</i>
Kapur	<i>Cinnamomum camphora</i>
Ashoka	<i>Saraca asoca</i>
Baar	<i>Ficus benghalensis</i>
Pipal	<i>Ficus religiosa</i>



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Conclusion

- Effective management strategies crucial for tree health, safety, and urban ecosystem contribution.
- Sustainable practices such as regular maintenance and addressing safety hazards are essential.
- Further research are essential to quantify the importance of urban greenery.



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Thank you

Any question?



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