

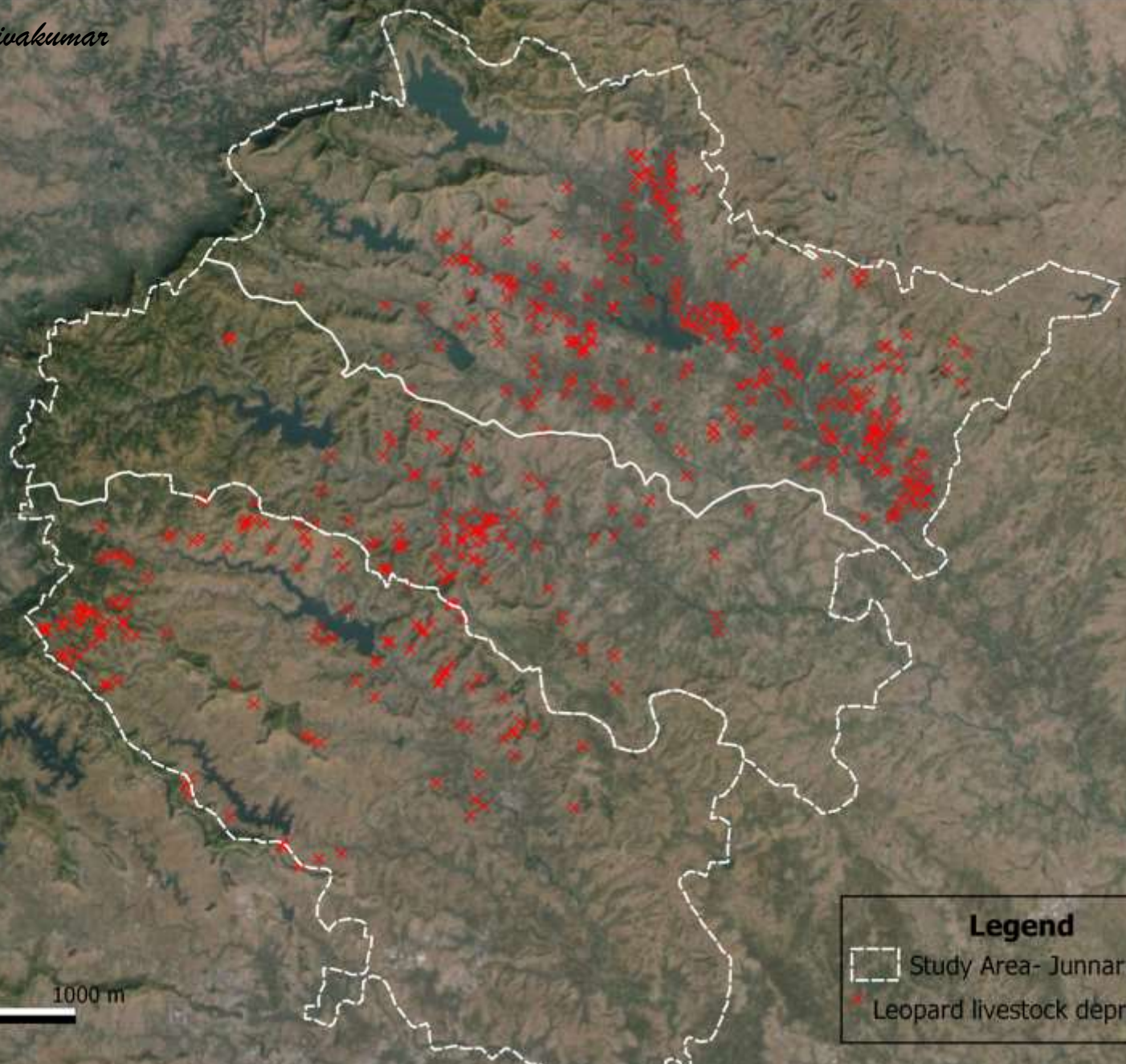
*Leopard- livestock attack predictive models
and their dependence on scale in a human
dominated rural landscape of India*



Shweta Shivakumar

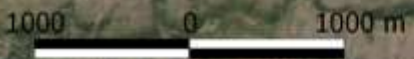
Scenario



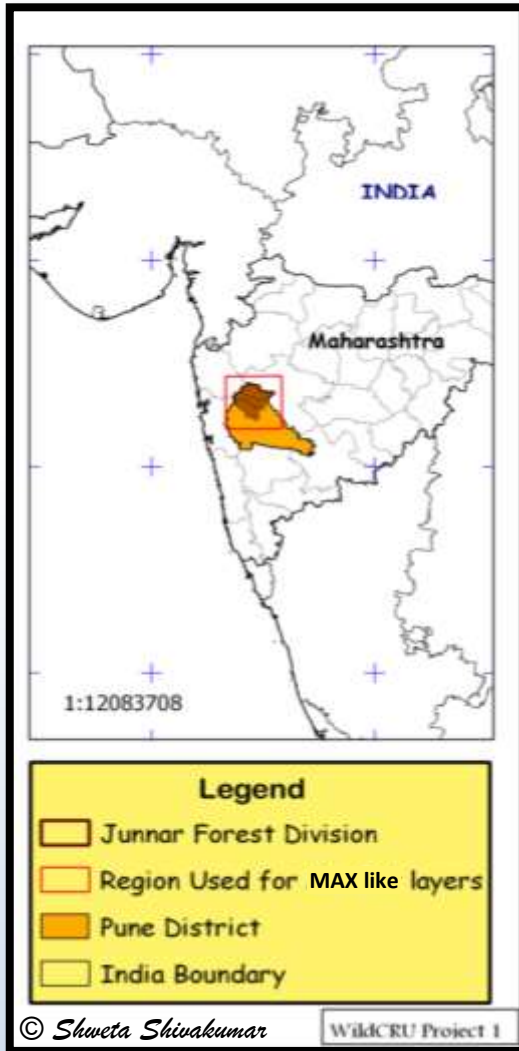


Legend

-  Study Area- Junnar province
-  Leopard livestock depredation points



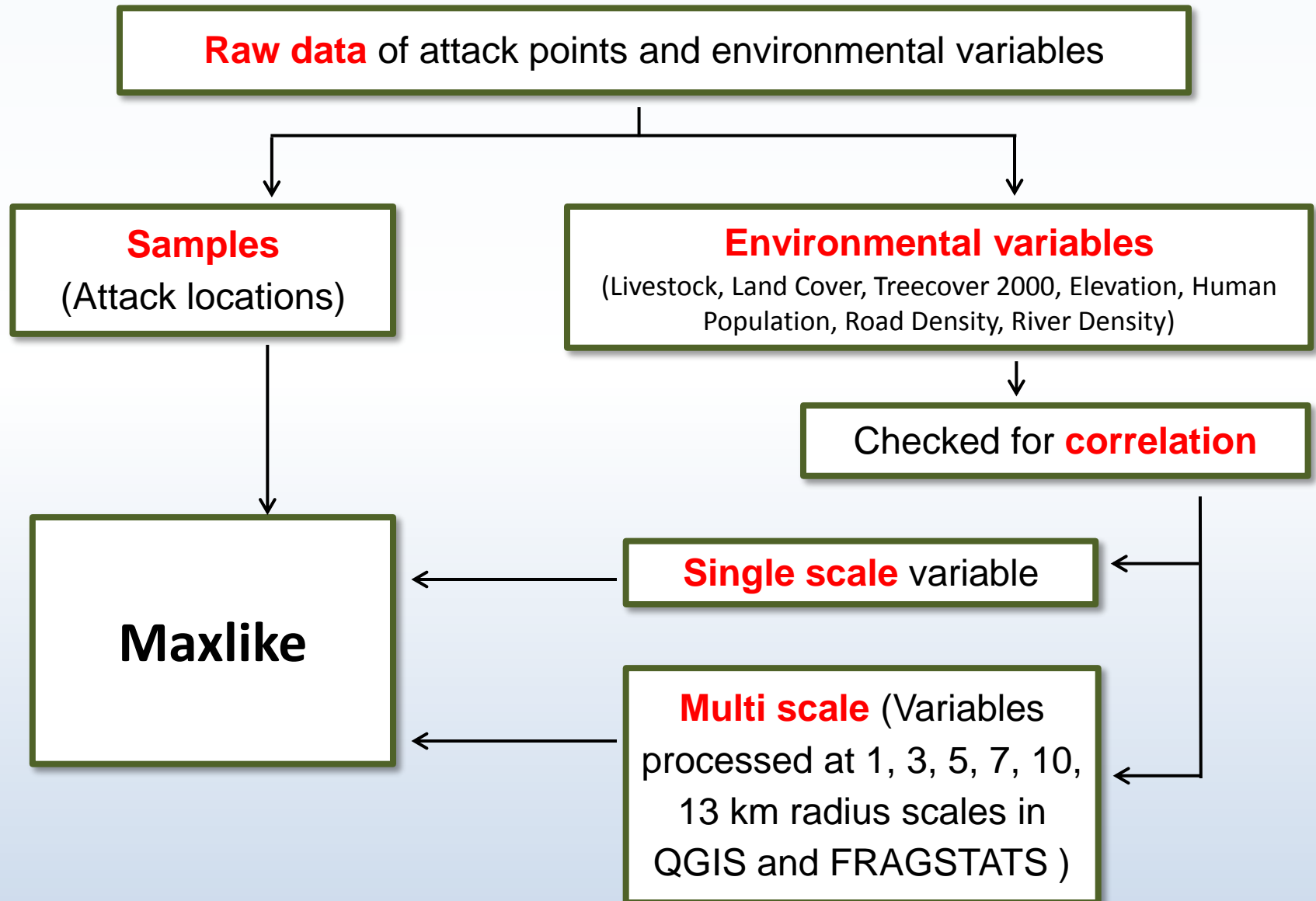
Study area



- Study area – Junnar Forest Division in Maharashtra state
- Agriculture dominated area- Human density – 267 km^{-2} (2001 census)*
- Athreya et al. (2004) from 1999 – 2003. Leopard attacks on livestock (n= 518)

* District environmental atlas (http://mpcb.gov.in/relatedtopics/atlas_pune.php)

What we did



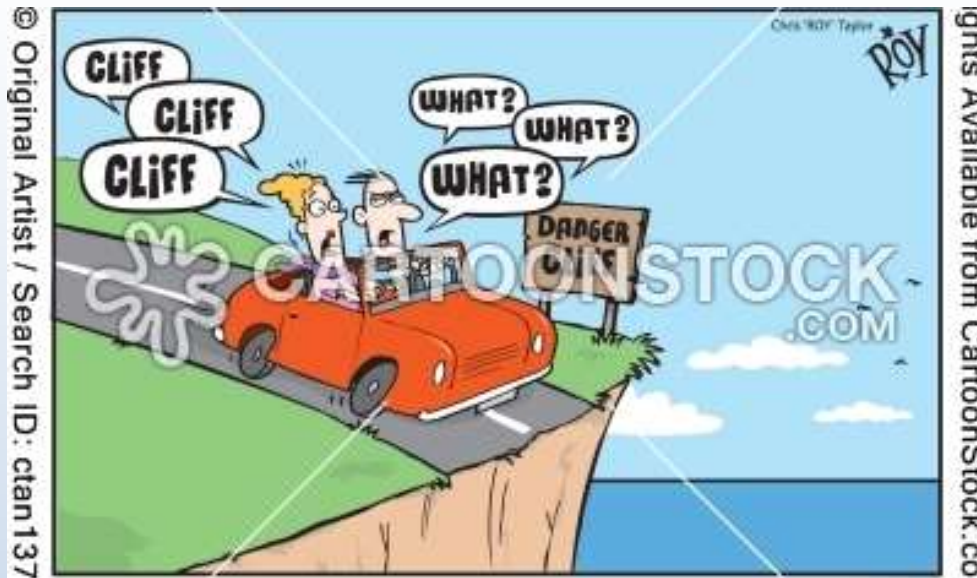
Scale





METRICS RUN

Metric	Ecological Significance
Focal mean	Landscape features' mean value at a larger scale
Contrast Weighted Edge Density	Higher value when edge is greater and (or) when contrast between patches is greater. E.g.: contrast between urban and agriculture is high



METRICS RUN

Metric	Ecological significance
Contagion	When a single type of patch occupies the whole landscape, then Contagion value is very high- in this case agriculture
Patch Density	Landscapes of encroached forests have higher patch density
% of landscape	Patch dominance measurement



Expected Outcome

- Forest presence at a larger scale has greater significance
- Density of dogs and pigs will greatly effect location of leopard attack at a smaller scale

NEXT STEPS

- Test the current model to the neighboring region to extrapolate spatially
- Test model before and after 2001 Feb to test effects of translocation of leopards into the region by forest department
- Final aim: to create zones with high probability of attack by leopard

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Thank
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