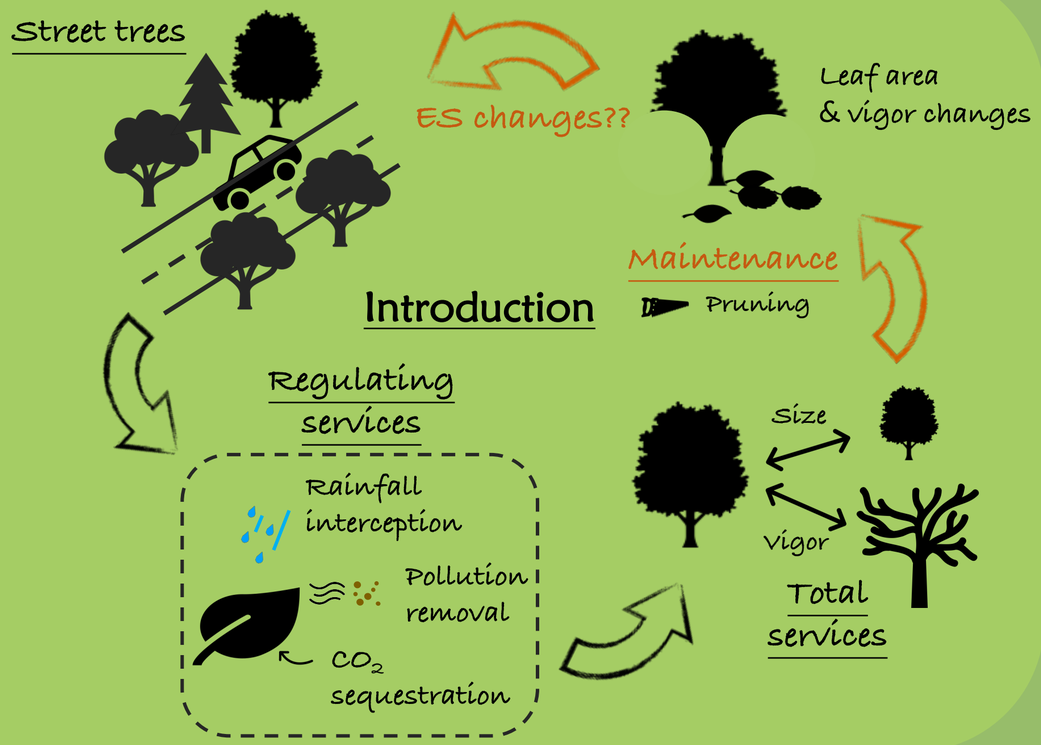
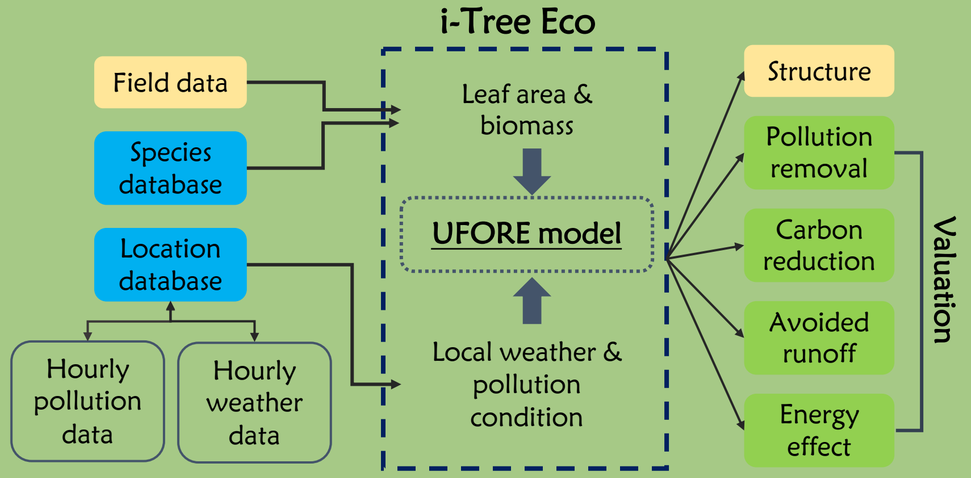
Pruning Intensity of Street Trees and Associated Effects on Ecosystem Services

Su-Ting Cheng[1,*] & Shuo Wei[1]

[1]: School of Forestry & Resource Conservation, National Taiwan University, Taipei, Taiwan;*E-mail: chengsuting@ntu.edu.tw

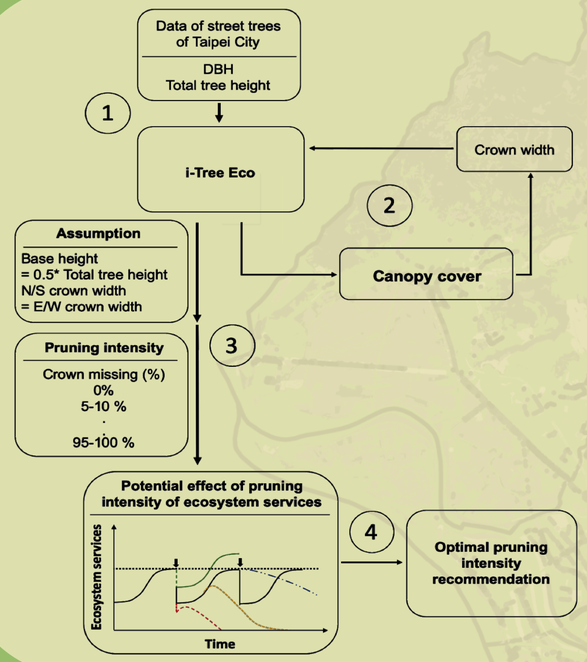
Introduction





Conclusion

(1) ES delivered by street trees are 5.6 million USD.
(2) Benefits is $7.23 and maintenance cost is $11.5 USD per tree/yr.
(3) Beneficial benefits like property should be investigate to increase benefits value to justified maintenance action.
(4) We suggest a 20% or lower pruning intensity to maximize the ES values.



Method

(1) Data collection: tree species, diameter at breast height (DBH), tree height, and GPS coordination.
(2) Calculate canopy cover and crown width by i-Tree Eco.
(3) Simulate pruning intensity from 10% to 100% and quantify their associated effects on the ecosystem services by adjusting crown missing percentage.
(4) Determine optimal pruning intensity based on simulation result and arboriculture practice.

Result