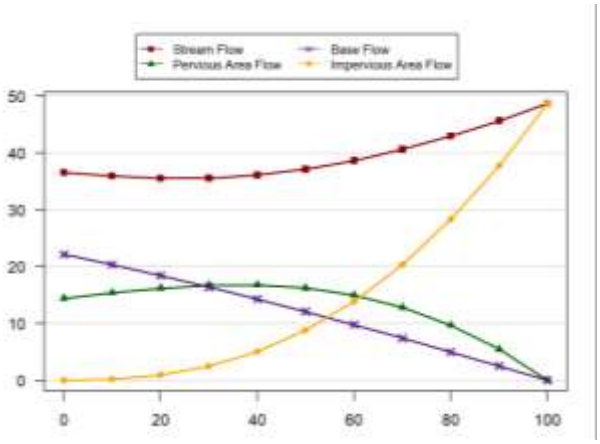
i-Tree Research Suite - HydroPlus

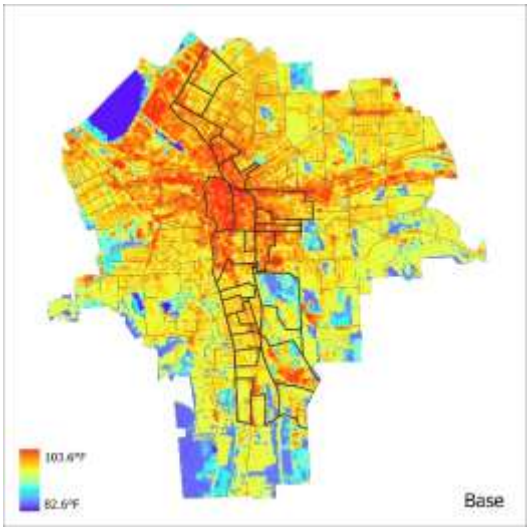
Peer-reviewed Environmental Models for Technical Experts www.itreetools.org/tools/research-suite

i-Tree HydroPlus is a collection of peer-reviewed environmental models under a unified C++ code and operated from a command line. The models use common algorithms to measure the effects of landscape characteristics and the benefits of trees on the environment.

i-Tree Hydro, a hydrological model, simulates land cover effects on water quality and quantity. It includes **Green Infrastructure**, which can measure the benefits of green infrastructure installations.



Hydro *– Visualizing changes in runoff with increase in impervious cover.*



Cool Air *- Prioritizing urban forest development based on heat patterns in Syracuse, NY*

i-Tree Cool Air, a distributed air temperature model, simulates the effects of land cover and energy on the urban heat island effect. GIS software is required for outputs.

i-Tree Cool River, a river temperature model, simulates channel morphology, riparian shading, stormwater inflow, groundwater mixing, and tributaries in relation to river restoration.

i-Tree Buffer, a nutrient hotspot mapping model, maps and simulates the impact of nonpoint-source pollution on nutrient hotspots.

i-Tree Research Suite exists in a technical and academic environment, made for research students and experts. Updated science and bug fixes are continually being implemented. Technical documentation, scholarly articles, and zipped downloads can be found on the i-Tree website.