

**Dan Staley, Arbor Drone. LLC**

**Title:** Next-Generation Remote Sensing and Analysis for Societal Resilience

**Abstract:** Abstract: Urban forests and green infrastructure are key components to resilient communities and livable cities. However, numerous risks threaten the resilience of cities in the future. These risks include increasing frequency of heat waves, invasive pests, increasing storm severity, and deteriorating infrastructure among others. Urban forests and green infrastructure increase societal resilience by reducing ambient air temperature, moderating building energy use, intercepting stormwater, making cities more livable for inhabitants, increasing property values and business viability, and making pedestrian and vehicle traffic safer, among many other benefits. In the face of increasing risks, how can these benefits be maintained or improved to increase societal resilience to global change? Remote Sensing with a new generation of satellites, personed aircraft and Unmanned Aerial Vehicles (UAVs) has the potential to inform decision-makers by collecting important real- and near-time data on urban vegetation to effectively manage urban vegetation to maintain benefits to society. Data collected include hyper- and multi-spectral data, LiDAR, thermal, and visual imagery and video. This presentation will outline these technologies - and analyses - available now and in the near future for the monitoring and management of urban ecosystems for ecological and societal resilience. Attendees will see actual projects and case studies at various scales, conducted in urban environments and elsewhere that utilized these technologies. These projects will demonstrate to attendees that affordable high-resolution aerial remote sensing and analysis is available today to effectively manage urban green infrastructure, respond to disturbance, and plan for future global change. Attendees will also see successful methodologies that conveyed these new analyses to decision-makers to provide strategies ensure a future more likely to have societal resilience to address global change.