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Abstract. Urban afforestation requires management to ensure its sustainability within the city, and urban pruning waste is generated regularly throughout the year. This paper analyzed the time series of the urban pruning waste volume for João Pessoa (Northeast Brazil) from January 2008 to December 2014, with the objective of determining the volume of urban pruning waste generated and adjusting it to a forecast model. The models studied were part of the ARIMA (Autoregressive Integrated Moving Average) Family. The main results indicated that the ARIMA family models presented satisfactory results for the forecast, and ARIMA (0,1,4) was the model that provided the best forecast for 2014. This study contributes with a better understanding of the pattern and amount of urban pruning waste generated in João Pessoa and could assist the future orientation of municipal public policies.

Keywords. ARIMA; Biomass; Forecasting; Forest Economy.

Abstract. Persian walnut (*Juglans regia* L.), which is native to Central Asia, has been widely cultivated throughout Europe over millennia as a multipurpose tree. However, only recently the naturalization process outside cultivation has been studied, mostly in temperate Europe, with no information regarding the Mediterranean region. Here we provide the first field investigations about the natural regeneration of walnut in two traditional Mediterranean agroecosystems: an irrigated mixed orchard in suburban areas and a non-irrigated prickly pear (*Opuntia ficus-indica* [L.] Mill.) orchard. The natural regeneration densities were statistically different in the two agroecosystems, ranging from 75 individuals per hectare in the prickly pear orchard to 200 individuals per hectare in the mixed orchard. Crows were frequently observed actively carrying walnuts in both environments. The irrigation practices and the shade provided by larger trees in the mixed orchard, and the potential benefits provided by prickly pear individuals, seemed to be crucial for seedling establishment and development in the two orchards, respectively. On the other hand, climate does not seem to represent a constraint for walnut recruitment, even if the mean annual temperature at the mixed orchard is slightly above the optimal temperature for walnut. Other biotic and abiotic factors that may trigger or hamper the naturalization process are also discussed in this paper, which explores the research needs for better understanding the naturalization potential of the Persian walnut in Mediterranean agroecosystems, as well as the effects of different land uses and future climate change on this process.

Keywords. Agroforestry Systems; Climate Change; *Corvus cornix*; Naturalization; Walnut Recruitment.

Abstract. Urban forests provide many benefits to residents and may also improve cities' resilience, the overall capacity to recover from anthropogenic and natural disturbances. Resilience is often considered from an ecological, social, or social-ecological perspective. In this literature review, we synthesize past studies ($n = 31$) to explore resilience in urban forests and green spaces and to understand how social or ecological perspectives have been considered. We found studies that combine resilience and urban forests have been increasing over time. Definitions of both resilience and urban forests are highly variable, but generally the studies increasingly focus on a social-ecological systems approach. The most common theoretical framework applied to understanding urban forests and resilience is a risk and vulnerability assessment approach.

Studies were spread across geographies, with some concentration near major research stations and universities with scientists who specialize in resilience and urban green spaces. As more attention is focused on the role of green infrastructure in contributing to urban resilience, we encourage the adoption of consistent definitions, theories, and indicators.

Keywords. Adaptive Capacity; Resilience; Social-Ecological Systems; Urban Forestry; Vulnerability.

Abstract. Utility vegetation management generates large quantities of wood that require disposal. To explore opportunities for reducing wood waste and promoting wood recovery, we evaluated the perceptions and experiences of utility-contracted tree crews regarding a wood recovery program. We conducted interviews with tree crew members both involved ($n = 24$) and not involved ($n = 58$) with the pilot program. Interview questions focused on workflow, interactions with homeowners and the public, and opportunities for implementation of a wood recovery program from the crew member perspective. Participants generally had positive attitudes toward a wood recovery program, wanting to provide benefits for communities through revenue from log sales and to reduce wood waste. Potential challenges associated with such a program included: (1) increased time required for tree removal; (2) safety concerns for removing larger logs; (3) physical obstacles such as mailboxes and stone walls; (4) homeowners wanting to keep the wood; and (5) low-quality wood (i.e., containing rot or metal). The protocol was modified to address such concerns. With the input of tree crew members, our findings suggest that a wood recovery program has the potential to be successful in reducing wood waste from utility vegetation management and generating benefits for communities, particularly in urban environments.

Keywords. Interviews; Tree Pruning; Tree Removal; Utility Vegetation Management; Waste Wood Recovery; Wood Products.

Abstract. Bark-included junctions are frequently encountered defects within the aerial structures of trees. The presence of included bark within a branch junction can substantially reduce the junction's factor of safety. Recent research has found naturally occurring bracing to be a primary cause of the formation of included bark within branch junctions. This study tested the load-bearing capacity of branch junctions in hawthorn (*Crataegus monogyna* Jacq.) using rupture tests and compared the mechanical performance of "control" branch junctions, bark-included junctions with the natural bracing retained, and bark-included junctions where we had intentionally removed their natural braces by cutting them out. Substantial variability was observed in the failure kinematics of bark-included branch junctions when their natural braces were retained. The type of natural brace present affected the mode of failure of the branch junctions when pulled apart. A single specimen with fused branches presented the strongest form of natural brace in this study, followed by entwining branches, whereas crossing branches were found to provide the least mechanical resistance. This study provides initial evidence that the type of associated natural brace is an important consideration when an arborist is trying to assess the likely mechanical performance of a bark-included junction within a tree and its likelihood of failure.

Keywords. Bark Inclusion; Branch Junction; Natural Bracing; Tree Inspection; Tree Risk Management.

Abstract. The process of urbanisation increases temperature and alters the thermal comfort in cities. Urban heat islands (UHIs) result in the rise of ambient temperatures. For example, in the densely populated island state of Singapore, the UHI intensity was some 4.5 °C. Such elevation in heat can negatively impact outdoor thermal comfort and may give rise to serious health problems. The present study investigated the benefits of trees and turf as mitigation strategies for urban areas. Short- and long-term observations were made for surface and globe temperatures over smaller plots of vegetation and hard surfaces involving tree shade and full sun. Similar observations were investigated over a larger extent of vegetation across concrete, asphalt, and turf within an urban park setting. The presence of turf and shade from trees greatly affected surface temperatures, and the effect was most pronounced when both were present. The presence of turf reduced surface temperatures by up to 10 °C, while tree shade led to a 12 °C reduction. Globe temperatures showed that the presence of turf and shading reduced temperatures between 5 and 10 °C. These results suggest that turf and trees can effectively cool surfaces and improve outdoor thermal comfort. The results of this study can be applied to urban planning of greenery and can be used as a reference for other tropical cities with similar climates that are also working to develop mitigation measures to improve the liveability of their cities.

Keywords. Globe Temperature; Surface Temperature; Tree Shade; Turf; Urban Environments.