

# Pests of Concern in Our Urban Forest

## A Summary of Key Pests

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Native and invasive tree pests <sup>(1)</sup> occur within the urban forest of Santa Fe infesting and causing damage to both native and non-native tree species. It is the intent of this writing to summarize key pests and their hosts as observed by the author. Trees that have exhibited pest populations of concern include elms, honey locust, ash, oaks, and pinon pine.

Future management strategies for these pests must be based on Integrated Pest Management (IPM) <sup>(2)</sup> including prevention, cultural control, mechanical control, biological control, and chemical control. The most effective, long-term way to manage pests is by using a combination of methods that work better together than separately. Specific pest management control options will not be discussed in this summary.

### Elms

Pests associated with elms (American, Lacebark, Prospector, Accolade) are European elm scale, European fruit Lecanium scale, European elm flea weevil, and Elm leaf beetle. Siberian elm, a recognized class C noxious species <sup>(3)</sup>, is also subject to these same pests.

High populations of scale insects cause twig and branch die back, premature leaf senescence and overall decline of tree canopy. Honey dew deposited by scale insects provides a medium for sooty mold to develop on leaves. Elm leaf beetle adults and larvae feed on leaves resulting in defoliation, twig and branch die back and overall decline. European elm flea weevil <sup>(4)</sup>, a new pest to Santa Fe, has been observed on all species of elms. Adult weevils cause a shot hole appearance to the leaves whereas the weevil larvae damage the leaves as they mine and feed inside the leaf tissue.

The following images show pest damage to elm trees.



European elm scale on branches and twigs causing die back of twigs and branches, Fort Marcy Complex.





European elm scale on elm branches, Plaza.



European fruit Lecanium scale on elm twigs resulting in die back, South Side Library.





European elm flea weevil damage to leaves, Railyard Park.



## Honey Locust

In 2016, Honey locust borer was confirmed as a new pest to Santa Fe collected from a tree at Railyard Park. Subsequent sampling has revealed this host specific pest is well established throughout the City of Santa Fe. Adults lay eggs on the bark of the tree in early summer and the newly hatched larvae immediately burrow into the sap wood of the tree. As the larvae feed, they cause severe wounding of the cambium tissue preventing the flow of water and nutrients to sustain the tree, resulting in rapid dieback of twigs and branches, and eventually killing entire tree.



Scarring of cambium by honey locust borer larvae, Railyard Park.



Canopy decline and die back due to honey locust borer damage, Railyard Park.





## Ash

Ash whitefly was first documented in 2015 as a new pest to Santa Fe. Nymphs of ash whitefly feed on the underside of leaves causing premature leaf senescence and subsequent weakening of the tree. Honey dew provides a medium for sooty mold to develop on leaves. As of this writing, Emerald ash borer has not been detected in New Mexico but has been detected in neighboring states of Colorado and Texas.



Ash whitefly damage to ash leaves, Santa Fe Community Convention Center.



## Oaks

Kermes scale on oak trees cause twig and branch stunting and die back on host oak trees. The large protective covering is often mistaken for seeds, buds or galls. Kermes scale feed at the base of leaf petioles and twig crotches. Terminal growth can be killed outright or the union between terminal growth and last year's growth may be weakened, causing terminal growth to break off.





Kermes scale on oak, Franklin Miles Park.



Branch die back due to Kermes scale on oak, Franklin Miles Park.



## **Pinon**

Pinyon needle scale (PNS) immature stages feed on the needles of pinon trees causing needles to be killed. Small trees may be killed outright by this pest. Consecutive infestations of PNS weaken trees, predisposing them to other pests such as Ips bark beetle. PNS weakened trees are unable to produce resin to prevent bark beetles from entering into the tree.



Pinon tree exhibiting typical defoliation damage by PNS, Adam Armijo Park.



## End Notes

(1)

**Pests** are organisms that damage or interfere with desirable plants in our fields and orchards, landscapes, or wildlands, or damage homes or other structures. Pests also include organisms that impact human or animal health. Pests may transmit disease or may be just a nuisance. A pest can be a plant (weed), vertebrate (bird, rodent, or other mammal), invertebrate (insect, tick, mite, or snail), nematode, pathogen (bacteria, virus, or fungus) that causes disease, or other unwanted organism that may harm water quality, animal life, or other parts of the ecosystem. (Statewide IPM Program / Agriculture and Natural Resources, University of California)

(2)

**Integrated Pest Management (IPM)** means a decision-making process for managing pests that uses monitoring to determine pest injury levels and primarily uses cultural, mechanical, physical, and biological tools to minimize health, environmental, and financial risks. The method uses extensive knowledge about pests, such as infestation thresholds, life histories, environmental requirements and natural enemies to complement and facilitate biological and other natural control of pests. The method uses the least toxic synthetic pesticides only as a last resort to manage pests. (Integrated Pest Management Program for City Property, City of Santa Fe Ord. #2001-10)

(3)

New Mexico Department of Agriculture

New Mexico Noxious Weed List Updated September, 2016

<http://www.nmda.nmsu.edu/wp-content/uploads/2016/11/Weed-List-memo-and-weed-list-2016.pdf>

(4)

Mention of **new pests** to Santa Fe are documented as such after being confirmed as new County records by Dr. Carol Sutherland, State Entomologist, New Mexico Department of Agriculture.

Ash Whitefly – 9/2015; V. Lucero

Honey Locust Borer – 6/2016; V. Lucero

European elm flea weevil – 5/2017; V. Lucero