

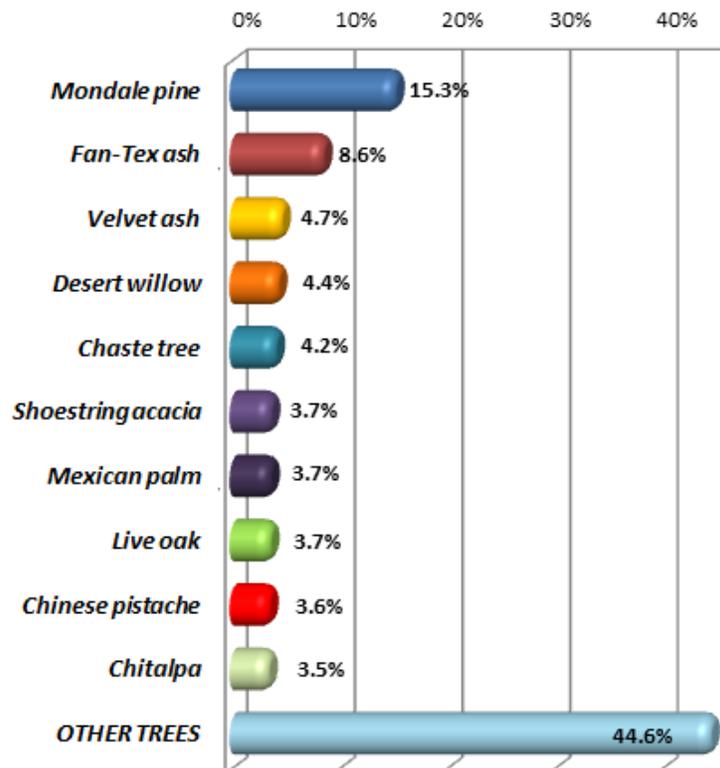
## Clark County Area of Interest



## Tree Inventory Results

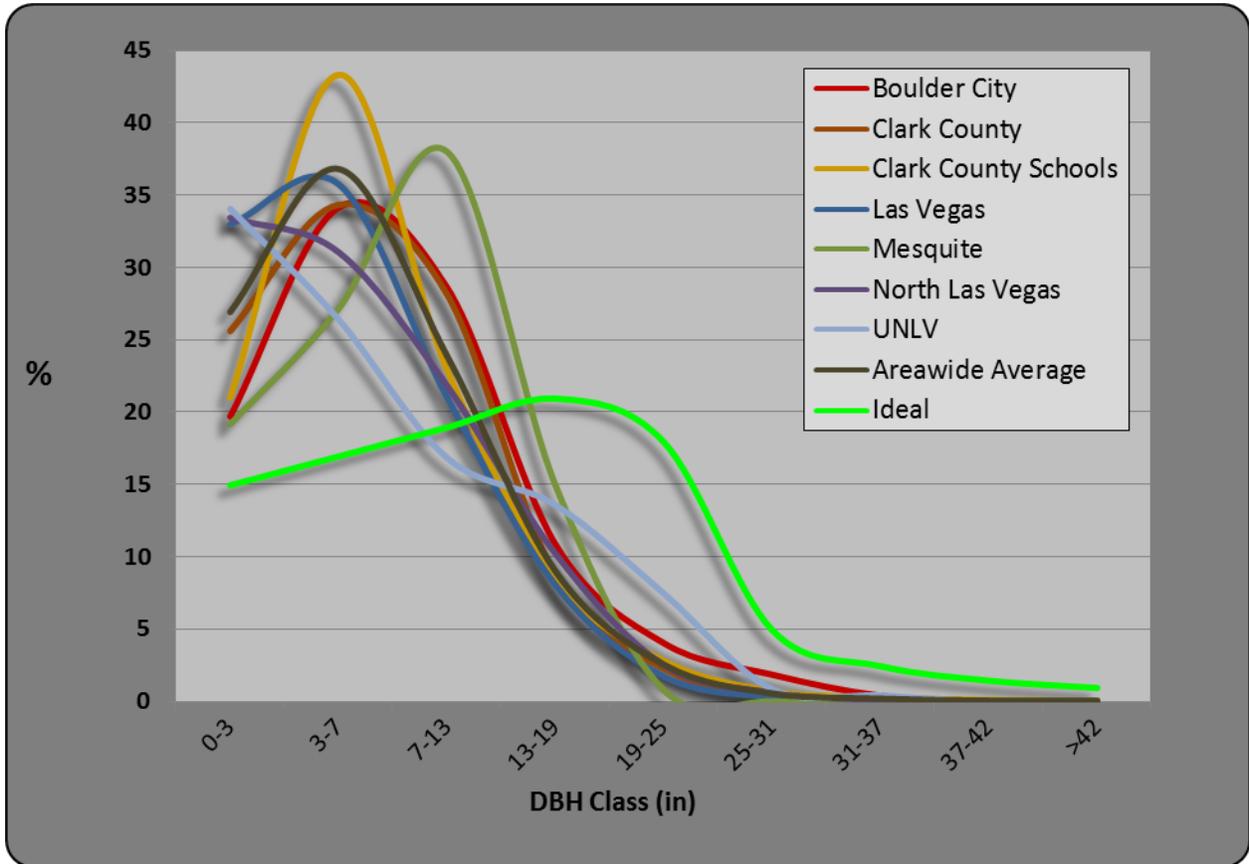
**Tree Population** – There were 95,050 trees inventoried across the Area of Interest (AOI) for the Clark County Tree Inventory Project.

**Tree Species** - There were 245 unique tree species identified in the inventory. The predominant tree species are Mondale pine (*Pinus eldarica*, 15%), and Fan-Tex ash (*Fraxinus velutina* 'Fan-Tex'). The chart below represents the population distribution of the top 10 species across the AOI's urban forest.

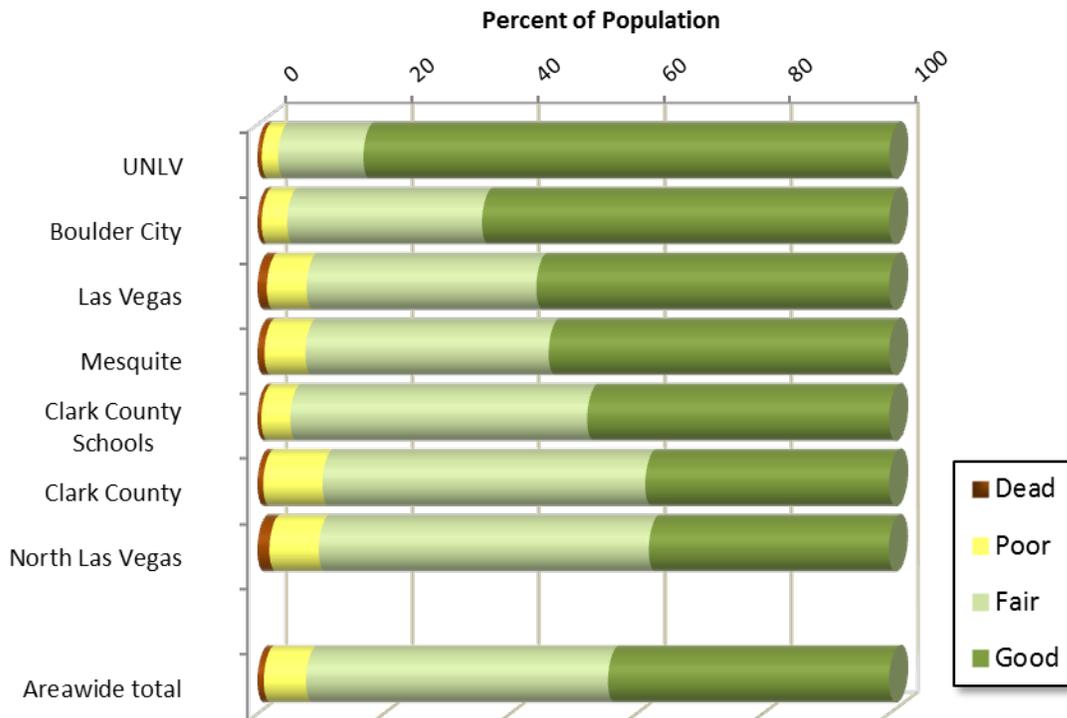


**Tree Size and Age Class** – The age of the urban forest can be approximated by considering the DBH\* range of the overall tree population. Across the AOI, 64% of trees measure between 0 to 7 inches DBH and 88% of the trees are less than 13 inches DBH. In comparison to what is considered an ideal population distribution, across the AOI, the urban forest is young overall, with few large trees. It is important to recognize that this younger, smaller, population can be somewhat reflective of the climate and smaller stature of the trees that make up the Clark County urban forest. The chart below compares the Clark County population distribution to an ideal distribution.

*\*DBH is diameter of the tree trunk at breast height, measured at 4'6" above the ground*



**Tree condition** – Each tree was rated for overall condition, including consideration for structure, foliage, and the root collar. When trees are performing at their peak, the benefits they provide are maximized. Across the AOI, the inventory found 45% of trees in good condition and 48% in fair condition. Less than 8% of the population was determined to be in poor condition or dead or dying.



**Replacement Value** – The community forest is a public asset that, when properly cared for, has the potential to appreciate in value as the trees mature over time. Replacement value reflects the current population numbers, stature, placement and condition. Across the AOI, replacement of 95,050 trees with trees of similar size, species, and condition would cost nearly **\$229 million**. The average replacement value per tree is \$2,412.

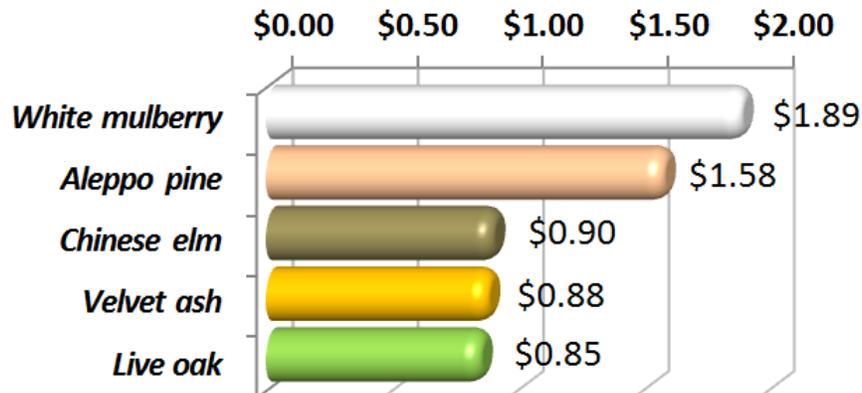
## Urban Forest Benefits

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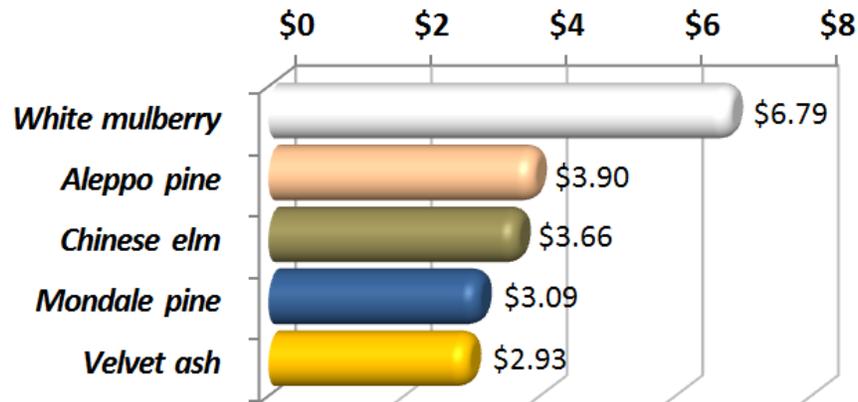
**Electricity and Natural Gas Reduction** - Electricity and natural gas saved annually across the AOI from both the shading and climate effects of trees is equal to 4,998 MWh (valued at \$335,389) and 35,178 therms (\$22,707), for a total retail savings of approximately **\$358,096** and an **average of \$3.77 per tree**. The chart below shows the top five performing tree species in terms of energy savings on a per tree basis.



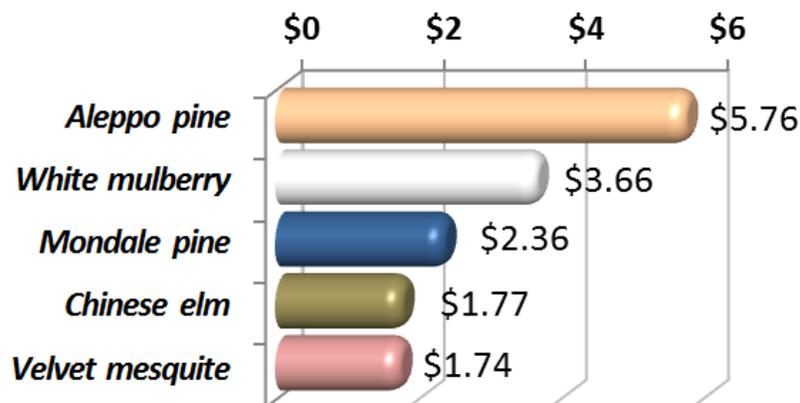
**Sequestered Carbon Dioxide** - To date, the inventoried trees across the AOI have sequestered a total of 18,279 tons of carbon dioxide (CO<sub>2</sub>) valued at \$274,188. Annually, this tree resource directly sequesters 1,854 tons of CO<sub>2</sub>, valued at \$27,809, into woody and foliar biomass. When CO<sub>2</sub> emissions from tree decomposition and tree related maintenance activity along with the positive benefits of avoided CO<sub>2</sub> through a reduction in energy needs are considered, Clark County's trees provide an annual net reduction in atmospheric CO<sub>2</sub> **4,181 tons, valued at \$62,713**, an average of **\$0.66 per tree annually**. The chart below shows the top five performing tree species in terms of CO<sub>2</sub> reduction on a per tree basis.



**Net Air Quality Improvement** - The net value of air pollutants removed, avoided, and released across the AOI is \$174,560 annually. The average net benefit per tree is \$1.84. The chart below shows the top five performing tree species in terms of net air quality improvements on a per tree basis.



**Storm Water Runoff Reductions** – The inventoried trees across the AOI intercept 31.96 million gallons of storm water annually for an average of 336 gallons per tree. The total value of this benefit across the AOI is \$153,418, an average of \$1.61. The chart below shows the top five performing tree species in terms of storm water benefits on a per tree basis.



**Aesthetic, Property Value, and Socioeconomic Benefits** - The total annual benefit associated with property value increases and socioeconomic benefits \$2,457,328, an average of \$25.85 per tree. The chart below shows the top five performing tree species in terms of aesthetic and property value and socioeconomic benefits on a per tree basis.



**Benefit Summary** – The total estimated benefits provided by the inventoried trees across the AOI is \$3.2 million, an average of \$33.73 per tree and \$1.63 per capita. These benefits are realized on an annual basis as follows:

- Electricity and Natural Gas Reduction - \$3.77 per tree
- Sequestered Carbon Dioxide - \$0.66 per tree
- Net Air Quality Improvements - \$1.84 per tree
- Storm Water Runoff Reduction - \$1.61 per tree
- Aesthetic, Property Value, and Socioeconomic Benefits - \$25.85 per tree
- Total Benefits - \$33.73 per tree

When the per tree values are calculated across the AOI, the inventoried trees provide the following in total annual benefits.

