

## **Initial estimates of sequoia mortality in the 2020 Castle Fire: summary of draft report\***

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### **SUMMARY**

Although some of California's Giant Sequoia trees have stood for a thousand years or more and are adapted to withstand frequent low and mixed severity fires, nothing compared to the intensity experienced in the recent Castle fire of 2020. Many of the large mature trees, those with trunk diameters of 4 ft or more, have been killed.

Preliminary estimates suggest that the 2020 Castle Fire killed between 31% to 42% of large sequoias within the Castle Fire footprint or 10% to 14% of all large sequoias across the tree's range in the Sierra Nevada. This translates to an estimated loss of 7,500 to 10,600 large sequoias. Although final numbers will take months to verify through field surveys, the unprecedented scale of loss is clear. The following is a summary of our preliminary findings.

- Satellite imagery tells us that about 10% of all sequoia grove area in the Sierra Nevada burned at high severity in the Castle Fire. Ground-based data sets from previous high severity fires in Sequoia groves show that, on average, in high-severity burn areas most large sequoias die.
- This suggests that something approaching 10% of all the Sierra's large sequoias died in the Castle Fire. But our ground-based evidence from previous fires tells us that additional sequoias die in moderate-severity areas, and some even die in low-severity areas, pushing our estimates to 10% and above.
- Much more field work will take place this summer to refine our estimates.
- As stewards in preserving some of our nation's finest natural heritage areas, the National Park Service will partner with other conservation agencies and organizations to continue to study, plan, and manage these unique forest ecosystems. Our natural resources and fire staff and research partners will dedicate our efforts to prioritize and protect the remaining old growth sequoias in our care and restore the health of these forests. And in so doing, protect the aesthetic and recreational value they offer to our local communities and the many visitors to Federal, Tribal, State, and local public lands across the Sierra Nevada.